Medical Library

THE HEALTH MAGAZINE

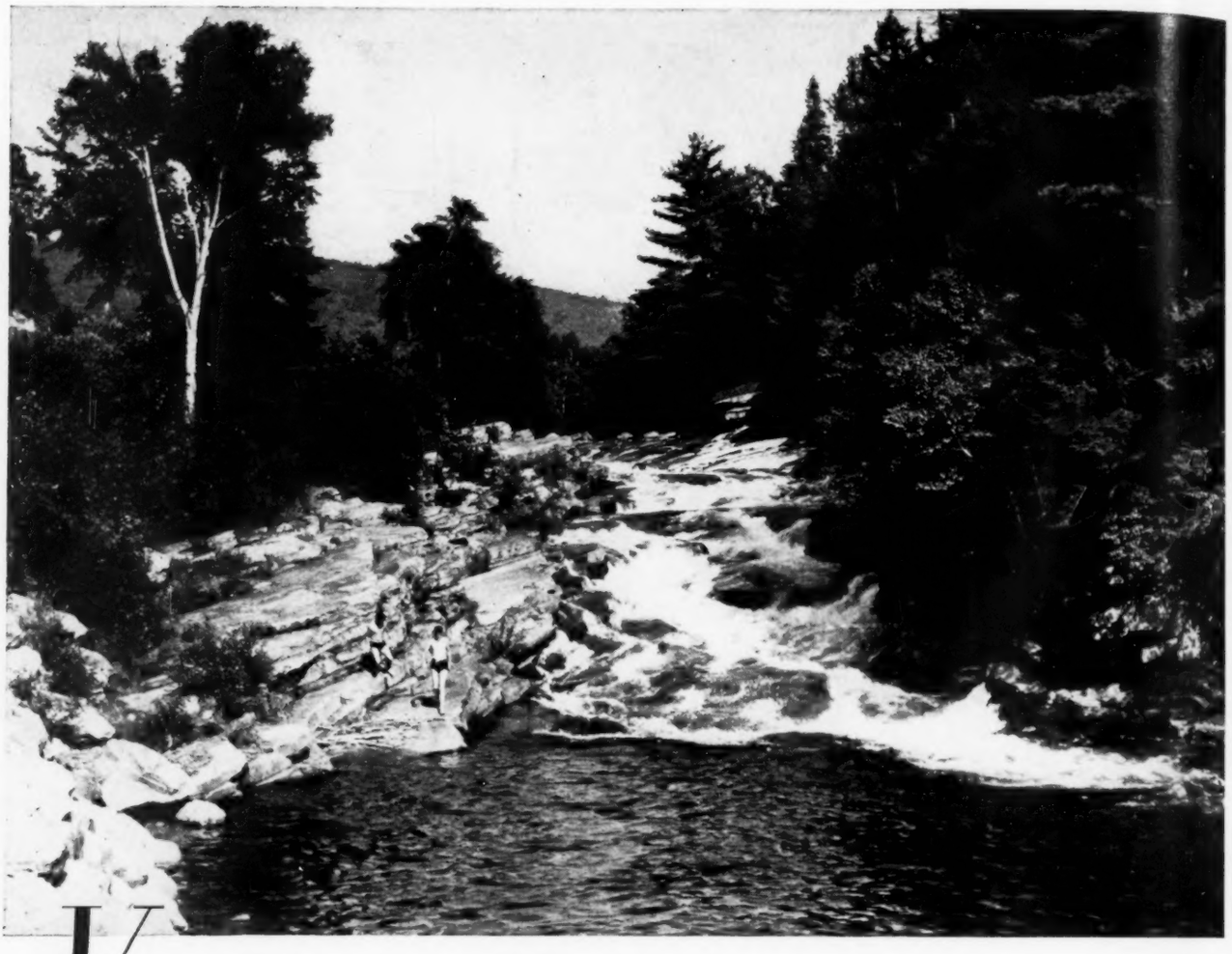
# HYGEIA

JUL 24 1940

**acts About**
**he Menopause**

See page 692

AUGUST
1940 · 25c



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LEO

## SEPTEMBER FORECAST

Next month's issue will feature the eighth of a series of articles devoted to the nine deadly diseases that top the list of killers in the United States. Although automobile accidents are not usually classified with diseases, the fact that the toll of human life for one year (1939) through motor accidents was over 32,000, places this cause of mass murder eighth in the list with bona fide, dangerous human "ailments." Earl J. Reeder, an official of the National Safety Council, approaches the problem of reducing the motor mortality rate by stressing "triple E" action—engineering, enforcement and education.

*Are you edentulous? If the answer is in the affirmative, you will be interested in guarding against "False Ideas About False Teeth." In an article thus entitled, L. D. Kurth, D.D.S., does much to ease the worries of the one about to acquire substitutes for his natural teeth.*

In "The Ductless Glands," August A. Werner, M.D., writes in nontechnical terminology about the work of the endocrine (ductless) glands, those structures which determine our stature, our mental capacity and our chances for normal all-round development.

Long delayed recognition comes at last to some of the obscure helpers of famous disease fighters. "Little Medical Heroes," an article by John Lentz, is the story of boys and girls who made significant contributions to the efforts of Jenner to banish the smallpox scourge; of others who aided Laënnec to perfect his stethoscope, and of those who helped such noted physicians as Lister, Pasteur, Banting and Best. The September issue will carry the first portion of this record, which deals specifically with the services of children in combating smallpox.

Other September articles include "The Treatment of Wounds" by Sumner L. Koch, M.D., "Safeguarding Sight" by Conrad Berens, M.D., and "Speaking of Cosmetics" by Lucile Boxley.


# HYGEIA

**THE HEALTH MAGAZINE**

*Published and copyrighted, 1940, by the American Medical Association. Edited by Morris Fishbein, M.D.*


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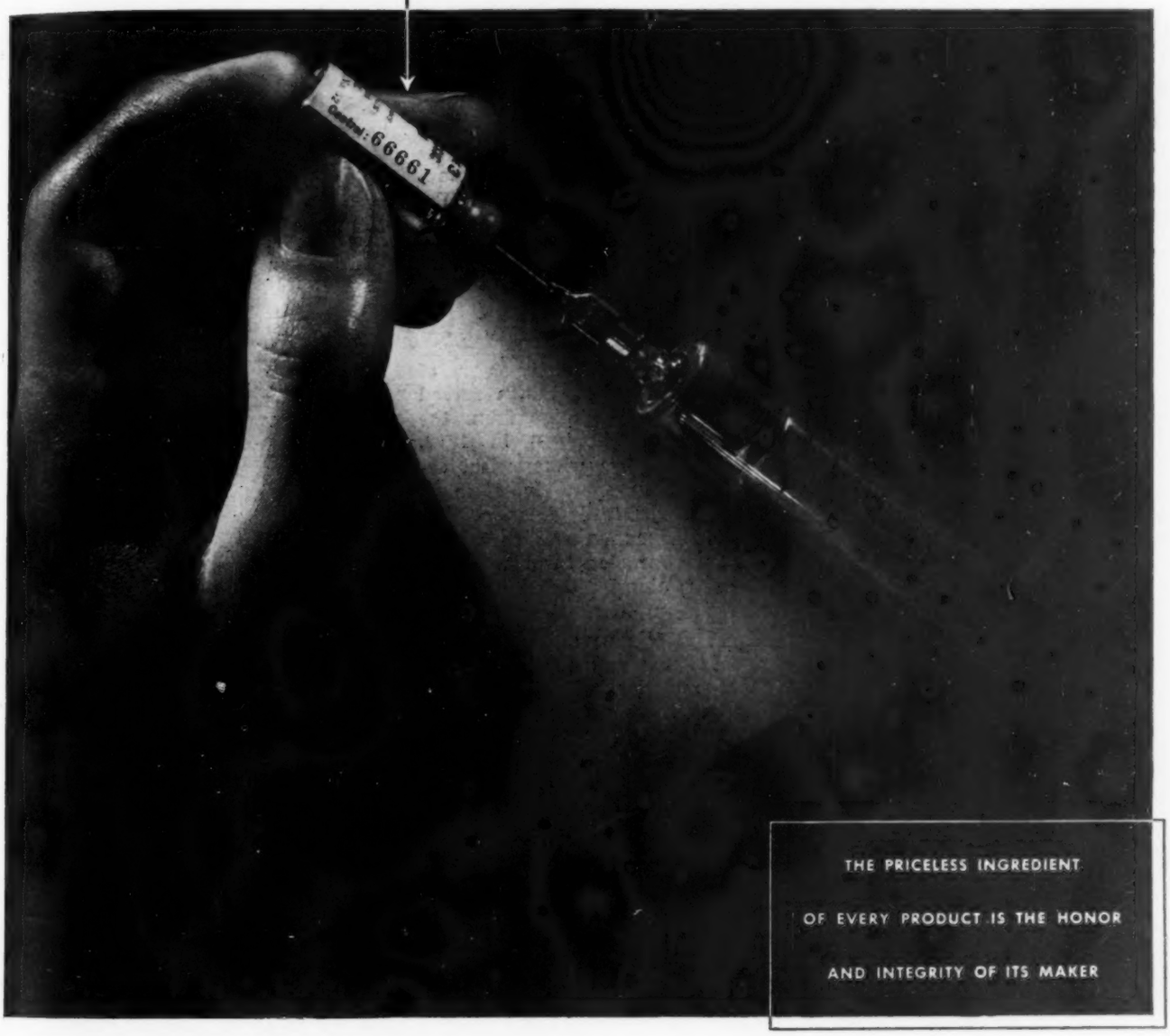
Unsolicited manuscripts will be considered by the Editor but must be accompanied by a stamped self addressed envelop to insure return if rejected. Manuscripts should be typewritten, double-spaced, and the original, not the carbon copy submitted. All rights reserved.

# Why that little number 66661 may be truly a life-and-death matter




**66661** is the control number on one vial of a Squibb serum used to fight the dread killer, pneumonia. That number, coupled with the Squibb name, is important to the physician. It assures him that the serum has been refined to remove undesirable elements; concentrated to a standard potency; tested for sterility and safety

How can one little number indicate so much? Because it is part of the Squibb system of control that applies to the production of every Squibb product.

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What does this mean? It means that the making of every Squibb product is measured and checked against rigid Squibb specifications. It means that the physician is doubly assured the product is right—first, by the name "Squibb"; second, by the individual control number.

No matter what the product, if it bears the name "Squibb" it also bears its own control number. Not merely the "life-and-death" products like pneumonia serum, but also such familiar preparations as Squibb Cod Liver Oil, Squibb Milk of Magnesia, Squibb Mineral Oil, Squibb Sodium Bicarbonate.

Look for the Squibb control number when next you purchase drug products. It is your extra assurance of quality.

**E·R·SQUIBB & SONS**

*Manufacturing Chemists to the Medical Profession Since 1858*

## "To See What I Could See". . .

*in Hygeia ads*

**Me oh my, what an abundant crop of interesting ads turned up this month! These jottings spotlight only a few — but make no mistake, scads of others are worth a look-see, too. Now, submitted for your consideration . . .**

—:—

Is your corset guilty of non-support? Try the "Press and Lift" test featured in the Spirella ad. And why not send for their free booklet "The New Art of Figure Grooming"?

—:—

Then, there's Lydia O'Leary's Covermark. A grand cream that does exactly what it says—covers freckles, scars, birthmarks and blemishes so skillfully no one would ever guess. And summer blessing, it's waterproof!

—:—

Aside to the Misses and the Missus. That Tre-Zur "It" Bra definitely has *it*. A separate adjustment or controlled uplift that insures maximum comfort. Really quite revolutionary!

—:—

Aren't those Taylor-Tots the most ingenious gadgets ever? Indoors the perfect walker for the pre-toddler child. Outdoors, they become the ideal stroller for airing the little one.

—:—

Sa-ay, have you read about the delicious new 100% Bran Cereal that just made its debut? It's a National Biscuit product—double-milled to improve its flavor and increase its digestibility. Look for more about same in their ad!

—:—

Another new product to create quite a stir nutritionally is General Mills' Vibic Flour. A unique method of flour manufacture gives Vibic the same level of important vitamins and minerals as the natural whole wheat. Specially important nowadays . . . See the current article on "Refinement of Food."

—:—

A hint for the hay fever or allergy patient. Take a peek at those wonderful Airfoam Pillows made by Multi Products. If you're sensitive to bedding materials, you'll find these pillows a blessing—dustless, self-ventilating, hygienic and cool.

—:—

"A cute child but such a thumbsucker . . . or nail-biter!" Do people say that about your youngster? Then, better get acquainted with Thum. Thum safely, effectively discourages these stubborn habits.

—:—

Think twice before you pass up the Parke Davis ad this month, ladies! I suggest you read it through carefully—then turn to the article "Facts About the Menopause." Such good sound information should be sincerely welcomed.

—:—

That's all!

THE ADCOMBER.

*See advertising index for page references.*

## Who's Who IN HYGEIA

**ROY A. BENJAMIN, JR.**, who has written an article on the education of deaf children, "They Hear With Their Eyes," page 746, is a graduate of the University of Florida and of the Columbia Graduate School of Journalism in New York City. He has worked for the New York *World-Telegram*, The Jacksonville (Florida) *Journal* and the United Press. He is at present Director of Public Relations for Tampa, Florida, but admits that he has a weakness for magazine writing.

**CAREY P. McCORD, M.D.**, author of "Grindstones," page 713, received his degree in medicine from the University of Michigan in 1912. Almost his entire professional career has been spent in research connected with trade diseases. His vocation, avocation and recreation have been directed toward finding new occupational diseases and then writing about them.

**MILTON L. MILLER, M.D.**, discusses "Facts and Superstitions of the Menopause," in an article appearing on page 692 of this issue. In addition to the degrees (A.B. and M.D.) he earned at Harvard College and Harvard Medical School, he has also held Rockefeller fellowships in neurology (London) and in psychiatry (New York). For two years he served as psychiatrist in the Institute for Juvenile Research of Chicago, and since 1937 he has been associated with the Department of Criminology, University of Illinois Medical School.

**ETTA M. SEYMANS** (see "Glamour Girl Hospital," page 708) says that she has written ever since she was "old enough to hold a pencil." The official beginning of her writing career came, however, when she became humor editor of her high school paper. Later she earned a part of her tuition expense at New York University by running a weekly resort newspaper. Since graduating from college she has done reporting in New York City and in Washington, D. C., for two news service agencies, covering "everything from society to police." She has also managed to do free lance writing on widely diversified topics.

## LETTERS FROM Readers

### *"Hear and Now"*

To the Editor:

As a subscriber to HYGEIA, I was greatly impressed by the article "Hear and Now" by Austin A. Hayden, published in the June 1940, issue.

Being hard of hearing, I have studied and continue to study deafness—its causes and all factors connected with it—to keep abreast of medical and scientific approaches to the problem. Your article was the best of many on the subject which I have encountered in the various magazines and periodicals to which I subscribe. I understand the physical and mental discomfort to which a person with defective hearing is subjected. There may be loss of health, a darkened outlook on life and abnormal behavior, unless adjustment is made to compensate for this handicap. I believe your article will do much to help many persons so afflicted in making the necessary adjustments.

ROBERT D. WELLS

Brooklyn, N. Y.

### *Salt Mining*

To the Editor:

With reference to the iodized salt article that appeared in the June issue of HYGEIA, we wish to draw

*(Continued on page 727)*

# "I was afraid of the Menopause, too!"

TO A WOMAN of middle age, the very word "Menopause" often conjures up a frightening picture.

A picture of an abrupt termination of all the things a woman holds dear. Infinitely precious things like charm . . . health . . . appeal . . . peace of mind. Largely due to whispered old wives' tales which have drifted her way since adolescence, she may regard "change of life" as a night-marish entrance to old age.

If you are one of those who dread the Menopause, you are likely to get some good news from some understanding friend who has gone through change of life herself within the past few years.

The chances are she'll say something like this: "I was afraid of it, too. But it isn't nearly the ordeal you think it is. Nowadays, doctors can give you so much help that you'll probably have very little trouble."

Yes, doctors *can* do more about the Menopause today—thanks to a wealth of medical research. Your doctor will tell you that modern treatment can go far towards relieving the physical and mental upsets accompanying Menopause—a measure of relief undreamed of 10 short years ago.

Moreover, at no time in a woman's life is sound diagnosis more important. For many women, knowing that they are passing through the Menopause, tend to blame it for *all* their ills. Yet, they may have some additional and entirely unrelated trouble. Something which, left to itself, may become serious before it is detected.

Under your doctor's wise guidance, you can face this period of glandular readjustment calmly and without apprehension. You are apt to be pleasantly surprised at how little it will alter your usual daily routine. And when it passes, the chances are that your life can be just as happy and serene as ever.

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***PARKE, DAVIS & COMPANY***
***Detroit, Michigan***

***The World's Largest Makers of Pharmaceutical and Biological Products***

*See your Doctor*

*Arthur C. Allen*

**Outdoor sports build healthy bodies, promote comradeship and understanding. For those who want their winter sports in the summer as well, sand skiing has become a popular new diversion.**

# FIT TO SERVE

OUR NATION is about to engage on a vast campaign of preparedness! We must be able to defend ourselves against any type of aggression which may come in the future. Only a people physically fit can consider themselves prepared. Physical fitness means more than just the ability to attend to one's daily work. It means the ability to undergo the rigors of speed in industry, the stress of life under military conditions, and the mental and physical traumas that come with war.

During World War I, great numbers of recruits were found to be incapacitated for service because of easily correctable defects. In many instances the teeth were decayed; in others the recruit had lost so many teeth that he was hardly able to maintain proper nutrition. Many a soldier had flat feet, incapable of continued marching. In innumerable instances the tonsils were seriously infected. Men were found who had gone through years with deficiencies of eyesight, easily correctable by proper eyeglasses. Especially important were cases of overweight and underweight—both types of conditions correctable by suitable nutrition. Many men were eliminated from service because of bad mental states.

No doubt our nation, should it engage in war, would wish to conscript the men in this country between the ages of 21 to 40; all young men from 18 to 21 would be considered in prospect for service. There are ways in which every one of us may now endeavor to contribute his part toward preparedness. First, we must determine for ourselves whether or not we are physically fit in the sense of being capable of passing an examination for life insurance or for entrance into the army. Any competent physician can make such an examination. Then, every correctable defect must be given suitable treatment. Next, each one of us should study personal hygiene with a view to adopting a mode of life leading toward physical fitness. That means developing proper weights for our heights and ages; next, the taking of a diet which will maintain that weight, provide for the energy we expend in our work and yield a sufficient amount of proteins, carbohydrates, fats, mineral salts and vitamins to take care of body growth and repair. There must be a sufficient amount of time allowed for recreation and relaxation, particularly for sleep, so that the body may face any kind of stress with a proper attitude and a sufficient amount of resistance. The body must be kept clean and free from infection. Cleanliness demands water inside and out at frequent intervals. Every sign of a beginning infection is a warning for immediate detection and treatment.

Part of the great campaign for preparedness involves the employment of additional men, particularly in ship yards and in the great industries which manufacture motors, munitions and supplies. Preparedness demands not only that the recruits for the army be kept physically fit, but particularly, that the industries which make possible a successful campaign be manned by men who will not fall by the wayside because of physical or mental breakdowns. In well-organized industries today, medical departments determine the physical state of workers and do everything possible to keep every man fit for work day after day. The worker who wishes to aid in the campaign for preparedness will, of course, cooperate in these efforts and will realize his obligation to the nation, to the industry and to himself.

Women, too, have a definite duty toward preparedness. Even though many women today participate in industry, they must realize, nevertheless, that as men are drawn into military service or into new occupations, women must take up much of the work of the world which was not formerly their responsibility. This does not mean that the woman worker must become hard or must lose that femininity which makes her truly a woman. She must know that her physical and mental condition are a part of the preparedness of the nation and that her health must be maintained in the best possible state.

With a people ready to discipline themselves to meet the nation's need, we may look forward with confidence to our ability to meet any demands that may be made upon us!

# To Sleep or

SLEEP is a part of living, just as surely as is wakefulness. The two comprise alternating phases in the cycle of existence.

How to stay awake sometimes proves to be a serious problem for many students studying for examinations and for workers on night shifts. Some nurses and doctors must work through the night as well as some of the employees at the telephone office, the power company, the police, the newspaper, dairy, bakery and other industries that produce goods and services necessary to modern life.

Those persons who must work at night often have trouble both in remaining awake while at work and in sleeping when they have the opportunity. This observation, together with many others regarding sleep and wakefulness, has made the study interesting to those scientists who have sought to answer questions as to why and how people sleep.

Volumes have been written on the subject, many theories advanced, and experiments made under controlled conditions.

In New York City there is a famous "Sleep Shop" in one of the stores, where they have collected every imaginable device for coaxing sleep, from warm, featherweight blankets to a phonograph that plays lullabies composed by the old music masters.

All persons are not alike. Are you a "morning" type, or an "evening" type? That is, when do you accomplish the best and most efficient work? Contrary to popular belief, the majority of persons do better work in the late afternoon than they do in the morning. There are four or five hours during the day or evening when individual efficiency is highest; it follows a warming-up period and precedes a slowing-down period. Then, during sleep, there is a period of deep sleep, both preceded and followed by periods of light sleep to complete the customary twenty-four hour cycle.

Each living animal has its own cycle of sleep and wakefulness, varying from the deep sleep of the bear to the relatively short sleep of the baby who is later conditioned to fit into the adult schedule with a long, quiet night.

Whether we regard sleep as a disagreeable waste of time or as pleasant diversion, it nevertheless is a characteristic of all animal life.

Here are some helpful suggestions, many of which are quoted from the new book, "Sleep and Wakefulness," by Nathaniel Kleitman, associate professor of physiology at the University of Chicago, who reviewed a mass of literature on the subject, carried on physiologic experiments and evolved theories of sleep. He says:

> The newborn baby probably wakes up only when it is hungry, wet, cold, or otherwise disturbed, falling to sleep again after it has been taken care of or the disturbance removed. This is the primitive type of wakefulness, or wakefulness of necessity, and the baby lapses back into a state of sleep when its primitive needs have been satisfied or external irritation removed. The wakefulness of necessity represents a disturbance of the "peaceful" sleep of the primitive type. A newborn baby cries lustily but does not smile or show any facial expression of pleasure.
>
> Wakefulness of choice is a prolongation and modification of the wakefulness of necessity. It becomes established in a gradual manner with the development of the cerebral cortex, when the baby's activity and his information about the outside world increases. The human adult is an example of an organism in which wakefulness of choice reaches its highest development.

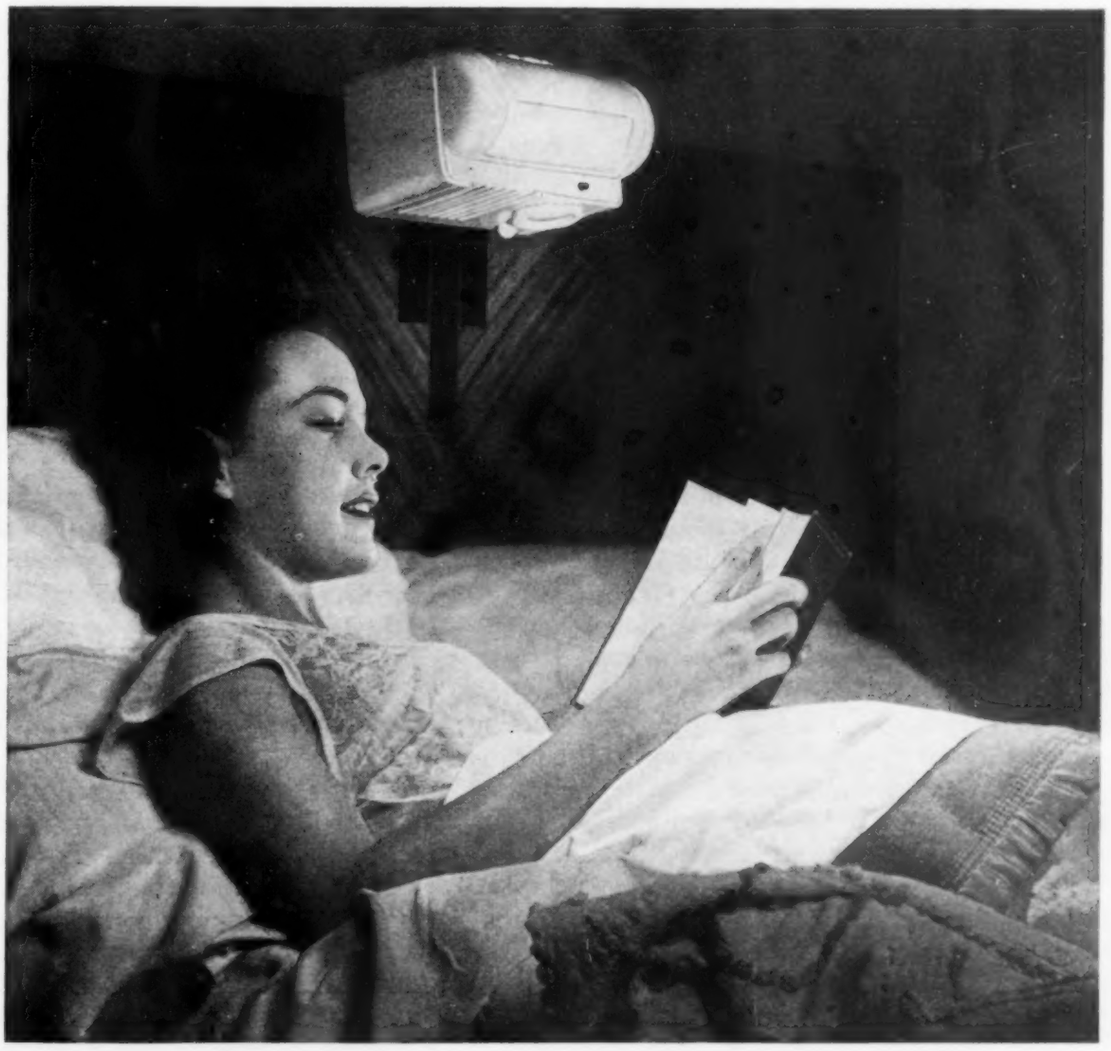
There are individual differences in ability to maintain wakefulness by choice. Light and sound tend to continue the wakefulness by choice, in themselves, but especially if they are interesting or exciting. Odors do not usually interest or annoy a person to the extent of keeping him awake. The most effective method of keeping awake is physical exercise, and this method is used during experiments made on

# *Not* to Sleep

By **DORIS W. McCRAY**

people for the purpose of observing the effect of prolonged lack of sleep; they are not allowed to lie down or to sit down long enough to go to sleep. Man can keep himself awake with thoughts alone, if he is not already greatly fatigued, although the other higher animals would not be able to do this, except perhaps the dog under unusual stress.

Fasting is helpful in keeping people awake. Hunger pangs are a primitive cause of the wakefulness of necessity. A brisk walk will usually transform one from a sleepy individual



Ideal conditions to induce sleep: a comfortable bed, soft music, proper lighting on a good book.

to one alert and wide awake. Caffeine, as found in coffee, is effective in keeping people awake if taken in sufficiently large quantities to fit the individual circumstances. Cold, extreme heat, pain or discomfort of any kind brings about the wakefulness of necessity. An exciting social function, a bridge game, movie, radio program or book serves to prolong the wakefulness by choice, because wakefulness becomes more pleasant than sleep.

However, sleep becomes the pleasantest possible way to spend one's time when the eyes itch and burn from prolonged wakefulness or the eye muscles become tired and the eyelids heavy, when decisions are difficult to make and it therefore seems wiser to "sleep over" a decision until morning.

After strenuous physical exercise, if one sits down or lies down, with no sensory stimuli to prolong wakefulness, sleep follows quickly. Muscular relaxation naturally follows exercise. Tense muscles prolong wakefulness.

It is a simple matter to put puppies to sleep. Take a puppy from 1 week to 3 months old, and simply hold him on your arm, with your fingers around his head and eyelids. After a few minutes in this position, you can see his body and limb muscles relax progressively, and a little later he invariably falls asleep. Frogs, guinea pigs, cats, dogs and even children will go to sleep quickly if their movements are limited and eyes closed. Monotony of environment encourages sleep.

Slightly raised body temperature encourages falling asleep. Experimental animals were found to awaken when exposed to cold, but went back to sleep when returned to a warm room. In modern homes, warm air may be just as fresh as cold air. Assumption of a horizontal position is in itself conducive to sleep. Talking to a dog or moving about the room will tend to keep the dog awake by attracting his attention, although he will sleep if he considers none of the sounds worth investigating. A monotonous, humming sound was not found necessary or especially helpful in putting experimental animals to sleep.

A number of different drugs may be used to put a person to sleep, but these should be used only by the physician because of the knowledge necessary in selecting one which is suitable for the patient's condition at the particular time. The amount of the drug to be used is a matter for keen judgment exercised by the physician with experience.

A young baby that is normal and healthy will take all the sleep he needs, if he has proper hygienic and dietetic care. Some babies sleep more than others under such ideal conditions. Wakefulness is brought on by such causes as hunger, thirst, flatulence, colic, bodily discomfort, uncomfortable bed or room temperature, lights and noise. The same statement applies to older babies, except that they have become interested in their surroundings and will remain awake because they are interested.

Regular health habits are important to children's sleep. An evening meal that is too heavy or too much excitement in the evening hours tend to keep the child awake or at best to produce restless sleep. The emphasis should not be placed on the number of hours slept but on having conditions favorable for sleep to come readily. Often adults are careless in this respect. They may administer punishment in the evening unduly severely, because they are tired and nervous. Or there may be exciting radio programs, too much company or excitement. By knowing, remembering and giving sufficient attention and work to the project, it is possible to assure more immediate and more satisfactory sleep for children.

There are two types of sleepers. One is tired in the evening, quickly falls asleep, soon reaches the greatest depth of sleep and wakes up refreshed and well rested; the other is alert in the evening, does not fall asleep easily, reaches the greatest depth of sleep toward morning and wakes up feeling tired. These two types vary likewise in the time of day when the peak of efficiency in work is reached. Some students prefer to go to bed early and get up early in the morning to work, while others prefer to study late at night.

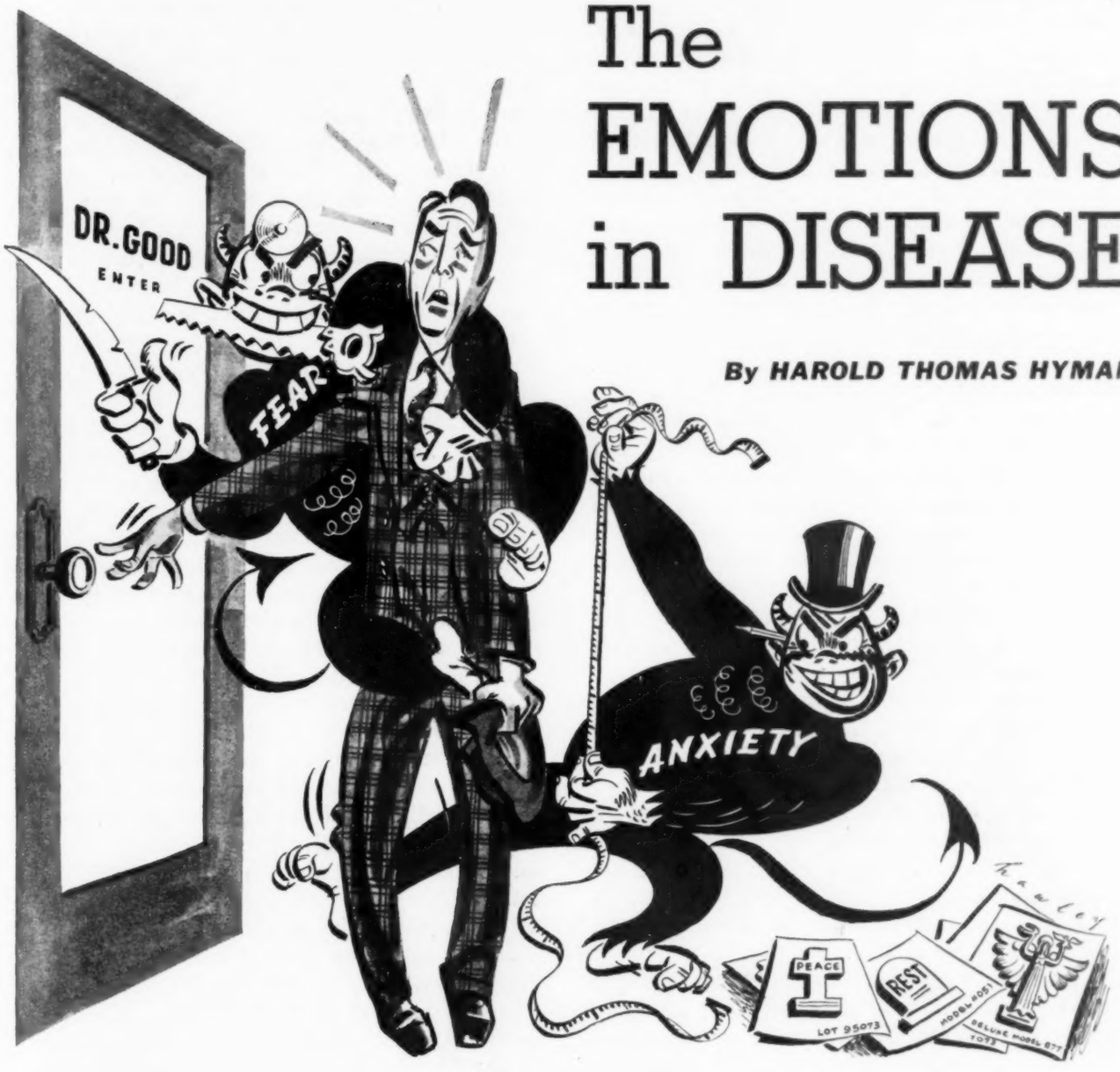
Some persons can change these natural inclinations easily; while others experience a great deal of difficulty in making any changes whatever in their schedule of sleep and wakefulness.

Sleep comes much more readily if a regular bedtime is always followed. The adaptation of the sleep-wakefulness rhythm to the twenty-four hour cycle of day and night is now considered to be a learning process. Unusual excitement or late parties are less conducive to sleep than a routine of quiet music and reading at home.

Fear, worry and excitement of any kind will delay or interrupt sleep. Prayer and any religious observance, which has the effect of quieting fears and worries, is to be highly recommended as a help toward going to sleep and remaining asleep. Emotional upsets are disadvantageous. Any immediate worries should be carefully "parked" until the following morning, as one would park an automobile until it is to be used *(Continued on page 732)*

# The EMOTIONS in DISEASE

By HAROLD THOMAS HYMAN




THE emotional factor enters into many of the problems that are presented by the patient to the doctor. Anxiety and even fear accompany most patients who seek medical consultation. Behind each complaint lurks a hidden sense of uneasiness or insecurity. Is the wound infected? The lump cancerous? Will the blood pressure be elevated and, if elevated, is there danger of a heart attack or a stroke? Does the headache result from congestion of blood or a brain tumor? Do the chronic cough and the sweating indicate hidden tuberculosis? Does pain in the chest, during the course of a cold, suggest a possible pneumonia? Is the fulness or pain in the ear likely to be a beginning mastoid infection? Is this indigestion or heart burn caused by an ulcer or a cancer? Does the rumbling in the right lower portion of the abdomen suggest appendicitis? Each of these questions or suspicions gives rise to emotional consequences that may modify and even confuse the situation which confronts the physician.

The patient desires relief from his complaint and assurance concerning his organic integrity. A careful examination, which excludes the presence of that which is suspected, may cause the fear and anxiety to be dissipated rapidly. When reassurance of normality cannot be given, when fear and insecurity cannot be assuaged, various functional and even organic disturbances may follow the continued emotional instability.

The manner in which each of us responds to fear constitutes a unique "reaction picture." These emotional consequences may be wide-

spread, yet each individual creates and recreates his own specific pattern. If a group were confronted by a bandit with drawn revolver, each would become frightened, though the degree of fear would vary. The physical manifestations of fear would be demonstrated in each of the group in an individual manner. One would become flushed, another pale; this one might develop a pounding or irregular heart beat, and that one an almost imperceptible pulse; "A" might exhibit symptoms suggesting seasickness, and "B" manifestations simulating ptomaine poisoning. Every possible combination of these and other symptoms could be observed.

Irrespective of the cause of the emotional disturbance, each of us would consistently and recurrently reproduce his individual reaction picture. It might be fright occasioned by the bandit, excitement at a tense movie or an athletic contest, fatigue from a protracted vigil, discouragement through unfortunate circumstances, or rage caused by an insult or a remote injustice such as daily confronts us in our newspapers.

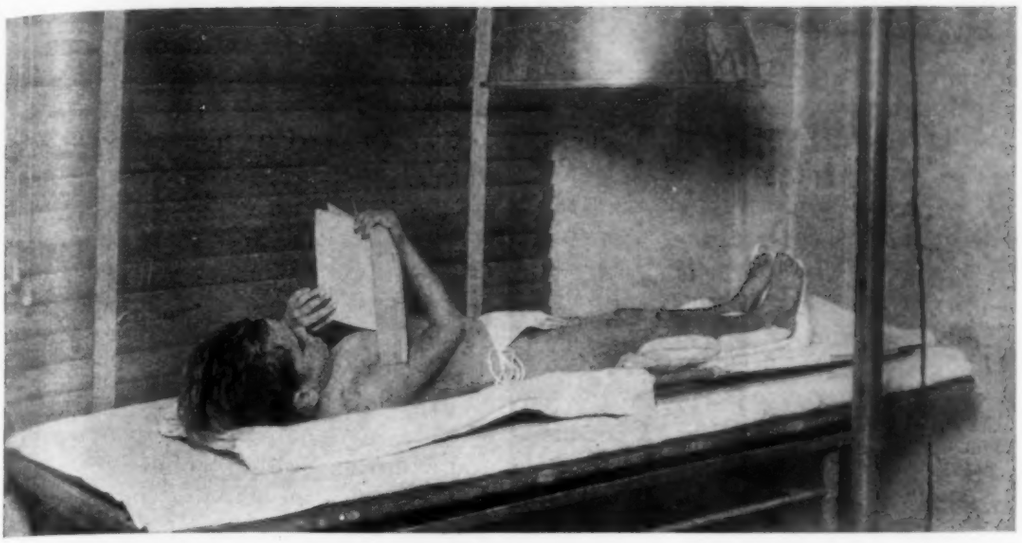
When the cause of the emotion is obvious, the physical manifestations that constitute the reaction picture may lightly be dismissed. We know that we have been emotionally disturbed. We recognize that the symptoms are caused by our emotions and that they are not manifestations of disease. Usually, when the emotion-producing circumstance is ended, the symptomatic disturbances abate or disappear. There is no medical problem involved.

When the symptoms of the reaction picture persist or when emotion-producing circumstances are forgotten, denied or relegated to the subconscious, the symptoms of this reaction picture give rise to greater fear and insecurity about the condition of the offending organ. Thus, the fear produces palpitation, the palpitation suggests heart trouble, the suspicion of heart trouble produces greater fear, and the greater fear occasions more palpitation, or vomiting, or intestinal difficulty depending on the type of the individual reaction picture. Sometimes the patient may deliberately or subconsciously perpetuate the symptoms because they are found useful. The nagging wife or mother may be able to "get her own way" because she has a sick headache or an elevation of blood pressure; the lazy husband or father may be excused for not seeking employment and find justification in the eyes of his relatives and friends if he is invalided by "indigestion" suggesting ulcers, or a cough suggesting tuberculosis. The Monday morning indisposition is all too familiar to the parent of the child of school age. The perpetuation of the reaction picture under these circumstances serves an excellent purpose. The patient clings tenaciously to symptoms.

By whatever means the reaction picture is perpetuated, a certain number of patients eventually seek medical consultation. The catalog of symptoms is reported to the physician. The emotion-producing circumstance is either deliberately or unwittingly omitted from the recital. The practitioner is confronted not only with symptoms that may suggest a grave medical condition, but he may also find objective manifestations of illness, such as a rapid pulse rate or an elevated blood pressure. The physician's suspicion of organic illness feeds the patient's anxiety. The manifestations of the reaction picture may thus be intensified.

It is in such circumstances that the family practitioner, through an intimate knowledge of the patient and his circumstances of life, suspects and recognizes the probable emotional cause for the difficulties. Often the wise practitioner is penalized for his sagacity. The patient resents the inference and insists on an organic explanation for his troubles. Often the temptation is great to yield to the wish of the patient and institute treatment for the nonexistent disease. For the physician this method is the more peaceful. But usually, the honest and wise old doctor is rapidly able to alleviate the symptoms by simple reassurance and an explanation of the origin of the trouble.

If the physician is in doubt concerning the organic integrity of his patient, he may have many and diverse laboratory examinations, or he may seek consultation with specialists. Most often the added weight of normal laboratory examinations and confirmation by specialists serve to allay anxiety, with eventual easing and disappearance of symptoms. However, there are times when the patient becomes impatient and starts on a voyage of medical meanderings. The advice of other physicians is sought without the benefit of consultation with the family practitioner. Many fates await the "medical shopper." Unscrupulous practitioners may exploit such patients and treat them for the organic disease which their symptoms suggest but which is not present. "Cures" may be sought outside the confines of the medical profession, whether by faith alone, by the laying on of hands or the employment of some complicated machinery or instrument. These "miracle workers" may alleviate symptoms. The mechanism of healing is not the result of the specific treatment but *(Continued on page 749)*



On alternate days, the patient is given treatments of heat, gentle massage and muscle reeducation exercises.

# The Treatment of Paralysis

**By RICHARD KOVACS**

TO BECOME paralyzed or stricken with sudden inability to move or to use any limb of the body is one of the most trying experiences in the drama of life. In medical usage the term paralysis means the complete loss of activity in a muscle or a group of muscles; in minor degree, when there is some muscular power left, it is known as paresis. The first fact to know about paralysis is that it is not a disease in itself; it is rather a symptom, an affection of the motor part of the nervous system, which consists of the brain, the spinal cord and the nerves leading to the muscles of the body. Another important fact is that paralysis does not necessarily mean an irreparable loss of function; under proper care and with nature's own tendency to restoration, voluntary use of the limb frequently returns in due time.

In order to understand how paralysis affects the patient, one may compare the delicate structure of the nervous system with that of a complicated modern telephone exchange. Movement of muscles occurs in response to voluntary or automatic orders sent from the central brain or from the spinal cord along a network of nerves. Anything that prevents the issuing or passage of these orders may cause paralysis.

Among the many forms of paralysis are the following: infantile paralysis, caused by inflammation in the spinal cord; hemiplegia or paralysis of one side of the body, caused by hemorrhage or clotting of blood in the brain; paralysis of nerve trunks in the limb caused by injuries or poisoning; paralysis of the facial nerve caused by a chilling draft; and paralysis of other nerves caused by new growths or tumors in various parts of the body. Paralysis may be due to an inflammation of the brain caused by an infection from the ear or by a contagious disease. There exists also another form of paralysis in infants, known as spastic paralysis. This disorder may be due to a brain injury caused by compression of the skull during birth: hence the name of birth palsy.

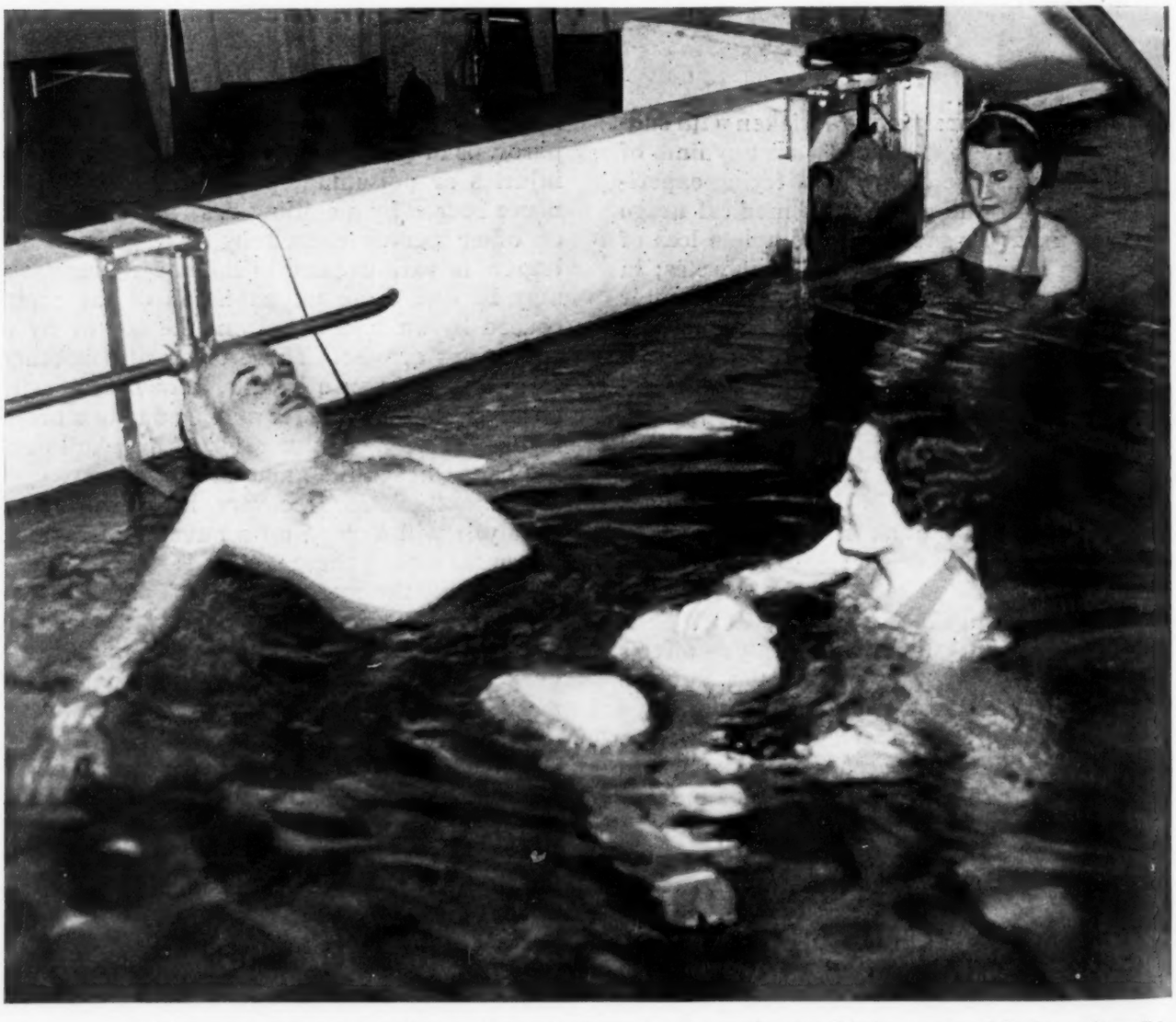
The outlook for recovery in all forms of paralysis will depend on a number of factors. Foremost among these factors is the possibility of removing the cause of paralysis; next, recovery will depend on the amount of destruction wrought in the nerve centers, and finally, the proper treatment of the paralyzed part itself may determine the degree of success. The nervous system differs from all other tissues in the body in the respect that when central nerve cells are destroyed, they do not grow again. Any function which depends on the action of these sensitive centers is, therefore, lost. Fortunately, in many affections of the nervous system due to disease or to injury some of the nerve cells are only temporarily benumbed by pressure or inflammation; when later the pressure is removed or the inflammation subsides, function returns as in an electrical exchange

where, during a short circuit some of the lines were temporarily out of order.

Infantile paralysis is brought about by a germ invasion causing inflammation of the motor centers in the spinal cord, described as poliomyelitis. After a day or two of feverish symptoms, paralysis of arms and legs or other muscles occurs. The extent of paralysis depends on the number of nerve cells affected; the outcome depends on the recovery of the cells after the acute inflammation subsides. Most of the victims of the disease are children, poor and rich alike, but the infection will also attack adults. Among the famous persons in history who suffered from poliomyelitis were Sir Walter Scott, the novelist; Lord Byron, poet and adventurer; Annette Kellermann, the swimmer; and Noguchi, the Japanese bacteriologist.

To forestall crippling in the care of infantile paralysis, physical methods of treatment play the most important role. Immediate and strict rest in bed and the early application of splints will prevent many deformities. Natural forces of recovery are thus allowed to work unhampered. The patient must be handled with extreme gentleness, and no rubbing or massaging of the sore muscles should be permitted in the acute stage. In cases where the chest muscles are affected and there is danger of suffocation, the patient is placed in an artificial respirator, known as the iron lung, until the muscles recover.

After the acute stage of paralysis, treatment of the affected muscles consists chiefly of gentle massage and exercise. Skilled technicians must administer these treatments, for the guiding principle is never to give the muscles more than their capacity warrants; it is also necessary to guard constantly against deformity. Because paralysis affects muscles unevenly, it disturbs the normal balance between opposing muscles;



Under water treatments have been an important advance in the muscle reconditioning process following poliomyelitis.

and so-called contractures of the strong muscles are likely to develop. Such tendencies can be prevented by the use of splints and braces during the time the limb is not being exercised. Later when the time for walking comes, braces may be necessary for a time to protect partially paralyzed muscles and hold some joints straight. In some cases electrical treatment of muscles is also useful.

Under-water treatment has been an important advance in the handling of poliomyelitis cases. The ancient principle of Archimedes teaches that a body submerged in water will lose as much weight as the weight of the displaced water. Therefore when a patient is placed in a tub of warm water, he or she can move many of the weak muscles with greater ease. In hospital pools children are taught by an especially trained personnel to exercise according to the doctor's prescription. Elaborate therapeutic pools have been installed in some places. But since it would be manifestly impossible to bring all poliomyelitis patients to the few pools available throughout the county, many states provide, through home nursing service, underwater exercises in small inexpensive tanks or even in ordinary bath tubs.

The recovery from infantile paralysis in unfortunately slow, requiring from nine to twenty-four months. It is rarely complete, although surprising results are at times obtained. At any rate, in most cases one is justified in looking forward to considerable improvement. Even if permanent handicaps remain, these may be lessened or removed at a later time by the use of braces or surgery. There is hope for all, even for those who are most severely paralyzed.

Hemiplegia [paralysis of one side of the body] occurs in adults past middle life. This affection is often due to a "stroke," a sudden bursting of a small blood vessel in the brain of a person suffering from high blood pressure or from kidney disease. Its principal symptom is complete paralysis of muscles on one side of the body. In many cases movement of at least part of the muscles returns after the blood clot has been absorbed. The treatment of this form of paralysis consists of proper medical care and gentle physical treatment through mild heating, stroking massage and exercise as early as possible. Light splinting is often helpful in preventing contractures of the arm.

Paralysis of the peripheral nerves is perhaps the most frequent form of paralysis in adult life. If a nerve trunk leading from the spinal cord to a group of muscles becomes damaged by pressure, a blow, a cut or by some poison circulating in the system, these muscles lose their power. Paralysis of one of the nerves on the shoulder causes inability to lift the arm, and similarly, paralysis of one of the nerves of the upper arm causes inability to lift the wrist; the same condition is often caused by lead and alcohol poisoning. Paralysis of a nerve about the knee causes inability to walk properly. The general principle of treatment in these affections is to eliminate the underlying cause first. In conjunction with this, heat, gentle massage, electrical muscle stimulation, active and passive exercise are of great value to maintain the tone of the muscles; the skilful use of such physical treatment is the only standby to help patients during the slow recovery period.

Facial paralysis of the so-called rheumatic type occurs often after a long automobile ride or on exposure to cold in susceptible persons. It is more frequent in women, who suddenly discover to their horror that one side of their face sags; all efforts to frown, close the eye, grin or close the mouth are unavailing. There is usually little pain; the whole trouble comes along like a thunderbolt out of a clear sky. Other forms of facial paralysis are due to an injury to the skull or the face or to an operation on the ear and at times to unrecognized infections elsewhere in the body.

Early appropriate medical and physical treatment offers the best chance of shortening the period of disfiguration in facial paralysis. Severe cases without proper treatment may require six to nine months for recovery, and even then some of the finer movements of the expression may be lost. Heat from a heat lamp or through diathermy applied at the beginning gives great comfort. It is now recognized that early appropriate electrical treatment may help to remove the congestion from around the affected nerve and thus prevent further damage. Gentle massage also helps. Patients with facial paralysis should wear eyeglasses on the street to prevent irritation of the eye, when eyelids cannot be closed on account of the paralysis. These persons should also use frequent boric acid washes and should wear a suitable rubber or adhesive strap during the night on the affected side to keep the muscles from sagging.

The treatment of the various forms of paralysis as described calls for a high degree of medical knowledge and skill and often requires the combined efforts of specialists in the various branches of medicine: diagnosticians, nerve specialists, surgeons, children's specialists, orthopedic surgeons, and physical therapeutists. There is no room for self treatment or quackery in the treatment of paralysis.

# Can Parents Mold Personality?

***How is your child's environment affecting his personality? Is he an honor student or is he just "getting by"? Are you doing all you possibly can to help him mold a normal outlook on life?*** ***FRANK HOWARD RICHARDSON*** ***reports on those factors the psychologists deem important***

WHAT has a person's childhood, school and college record to do with his chances of succeeding in life? Everything, says one group of partisans, who point convincingly to the large number of honor students and Phi Beta Kappas in "Who's Who." Nothing at all, say their opponents, who have a sneaking fondness for the Huck Finns at the foot of the class; and they lustily sing the popular song about "Puddin' Head, Wooden Head Jones," who didn't know beans from bones but who married the teacher and became the town's most prominent citizen.

Most of us haven't any opinion either way but are inclined to give all the credit or blame to Lady Luck. For we can find examples of both the bright and the dumb, teacher's pet and the class dunce, alike winning fame and fortune; while it is no rare thing these days to see both Ph.D.'s and illiterates rubbing elbows in the bread line or on relief.

It is easier to reconcile these conflicting views, if we realize that success in life depends not on one factor—mental development—but three. These are native intelligence, acquired knowledge or education, and a third something that for lack of a better name we may call personality. We can measure any one's native ability by mental tests; we can estimate his education by examinations and school records; but heretofore we have had no way of grading his personality and recording it for purposes of comparison. It is this variable factor that so frequently accounts for success or failure.

Of recent years, however, science has turned its attention to the task of measuring personality as accurately as it has long been able to measure the other two factors. But we'd better decide just what is meant by this overworked word "personality." It is not the "wonderful personality" that the radio crooner raves over

in the girl he is serenading nor yet the "personality plus" of the high-pressure salesman.

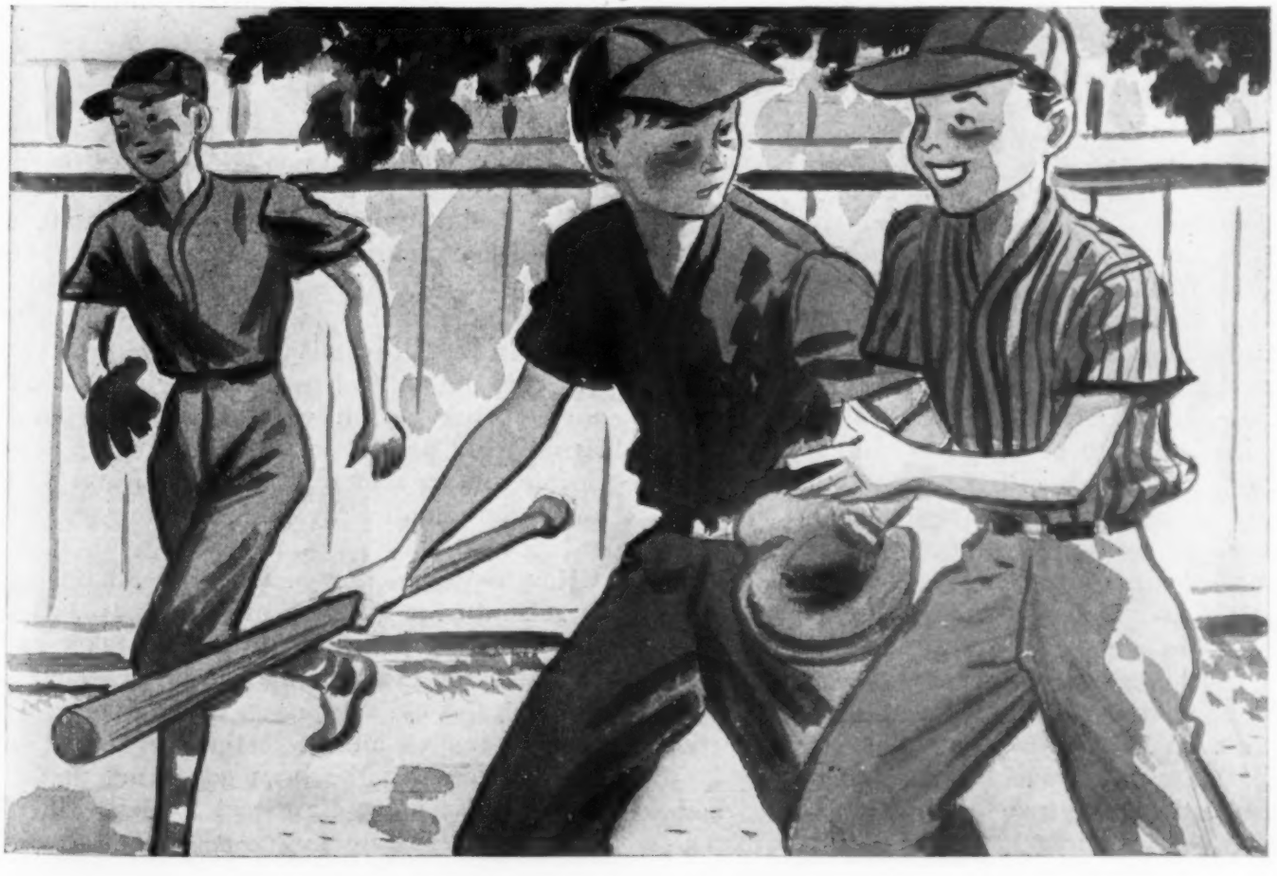
No, the elements that psychology is dealing with are the characteristics that enable a person to interest and influence others. This is the definition given by Henry C. Link, Ph.D., of the Psychological Service Center, who is a leader in the study of personality and its determination. It expresses exactly what a person must do in order to get along well in school, make friends with classmates of both sexes, procure a job and attain success in later life. To be sure, all these call for native intelligence and education, too; but even with more than an average equipment of both of these, no one gets very far who is badly deficient in personality, even with the help of a Phi Beta Kappa key or a Ph.D. degree.

Some one may ask how it is possible to measure such an elusive quality as personality. Now that an increasing number of psychologists have been attacking the problem, it is proving not nearly so tough a nut to crack as it first seemed. The method is quite simple. It consists of presenting a "battery" of 152 questions for answer by checking "yes" or "no" and then tabulating the answers in such a way as to give a score or grade. The youngsters tested usually enjoy the process by making a game of it.

If we skim hastily over some of the topics these research psychologists consider important, we can deduce certain laws that govern the formation of personality. Parents who understand these will be in a position to aid their children in this, which is one of the most important phases of life.

First there are questions that refer to physical health and habits, how regularly and how well the youngster eats, sleeps and rests and how easily he tires. Hunger, insufficient or irregular sleep, constipation, exhaustion, frequent colds or anything that lowers physical well-being impairs personality. This gives us *The Law of Health.* This states that, other things being equal, the better a child's health is, the better his personality will be.

Take next the questions that concern his recreational life; how he plays, what games he likes best, which games he excels in and how he gets along with others in athletic contests. We find that the child who is allowed from earliest years to play, without cosseting and interference from oversolicitous elders; who is permitted to "take it on the chin" from rough playmates, is being toughened for the rough contacts of life. Learning to play all sorts of games is a valuable means of learning to get along with people; and the more games played, the better. Those that call for teamwork and



*esprit de corps,* the one-for-all and all-for-one spirit of the Three Musketeers, develop the best personalities. Baseball, basketball, football—that is, actually playing them, not merely "rooting" from the sidelines while others get the knocks or the benefits accruing—as well as playing in the school band are decided aids. Forgetting one's self for the good of the side is excellent training for the game of life.

And so we can deduce *The Law of Play.* It tells us that the freer from adult interference and the more cooperative with others a child's play is, the better his personality will be.

Now we come to the questions that give a good idea of a boy's or girl's relationships to other persons. We find that belonging to clubs, Boy or Girl Scout troops, Sunday School or church clubs certainly does aid in personality development. The same is true of free, comradely association with playmates of the opposite sex, where this is healthy and free from silly sentimentality.

From this we may deduce *The Law of Associations.* This states that the better developed and more varied a youngster's associations with others are, the better developed is his personality.

Next come those questions dealing with allowances and the earning of money. It has been determined that boys and girls who depend on parental allowances for their spending money have personalities decidedly inferior to those who have to sell magazines or take subscriptions, do "chores" or in other ways depend on themselves for money, if they are to have any at all. To be sure, we need not expect parents to take these findings seriously enough to deny their children (and themselves!) the pleasure that comes from giving gifts to them. A father who could afford to put his son through college, yet insists that he earn his own way, would hardly be admired by his associates. And yet, in deciding what money arrangements they are to make with and for their children, wise parents will not be altogether unmindful of *The Law of Deprivation,* as we may call it. This states that the less unearned money a child receives and the more he works to procure for himself the advantages conferred by having money to spend, the better will be the personality he develops.

The last group of questions concerns doing things that are disagreeable but are done from a sense of duty. The findings here are particularly worth consideration by parents; for they conclusively disprove the claims of those "modern" parents backed by some of the more radical of the self-styled "progressive" educators, who have been telling us that it is bad psychology to insist that children do things that are unpleasant and that they do not want to do. And so, we discover *The Law of Discipline.* This states that a young person who continues working at the things he dislikes because he has to, or because he makes himself do them from a sense of duty, quite irrespective of whether or not he develops a liking for them, is unquestionably in line to develop a better personality than the one who never goes through the mill. This seems to be one of the strongest factors going into the creation of a desirable personality.

But how can parents who try to apply the Law of Discipline avoid the dangers of undesirable marginal learning? This is the psychologic principle that explains why the child who is forced to do something disagreeable comes to dislike the parent who makes him do it, and everybody and everything connected with it. Are not the Law of Discipline and the Principle of Marginal Learning irreconcilable?

Indeed they are, if we wait until the adolescent years come along before training a child to do the disagreeable duties that simply must be done. They are not, however, if we commence this training when he is not too young to understand and not too old to be expected to obey. Just what this ideal age is must be ascertained for each child. No two children are exactly alike in this respect; and it requires tact and intuition to know when to "bear down" and when to overlook!

One more law emerges from a study of the records. We may call this *The Law of Growth,* though it might be more accurate to call it the law of lack of growth! It states that, unlike so many other qualities and characteristics, personality does not necessarily improve with growth but may be static or may even retrogress. In fact, it would almost be fair to state that it is the natural tendency for the personality of the person who is good at "book larnin'" but poor at social adjustment to deteriorate, unless something constructive is done about the situation by understanding parents or teachers.

How new and how practical is all this research into the question of personality? It is enormously practical in its applications, and brand new in the scientific basis it gives us for principles of child training, which many good parents realize almost instinctively must be sound. Knowing the laws governing personality and seeing their direct influence in its formation give parents *(Continued on page 733)*

Science marches on—and another vitamin is added to its credit. This one, vitamin K, may become vital in restoring prothrombin to the blood supply of infants.

# The Stop-Hemorrhage Vitamin

**By NOAH FABRICANT**

IT WOULD be a great mistake—if you are at all skeptical—to permit the current ballyhoo on vitamins to prejudice you against them. For those mysterious chemical substances found in certain natural foodstuffs really can perform remarkable cures. The recently discovered vitamin K, a vitamin little tried until a few months ago, can stop hemorrhage under certain conditions. The introduction of this new addition to the vitamin alphabet assures a new lease on life for those babies who formerly were in danger of bleeding to death during the first week of their lives. And adults who are victims of a certain kind of jaundice now have a better chance for recovery after an operation.

The danger of hemorrhage arises from the lack of a substance in the blood called prothrombin. It is prothrombin that brings the blood-clotting mechanism into action in case of injury and thus checks hemorrhage. In the normal adult and in the normal infant this is always present, but for some unknown reason the blood of the newborn infant undergoes a decidedly dangerous prothrombin slump during the first week of life. Consequently, about 25 per cent of all injuries associated with the birth process—many of them fatal—are due to bleeding.

Obstructive jaundice, an ailment in which the skin and eyes turn an unnatural yellow, is another condition in which vitamin K plays a vital role. Many jaundice patients suffer from the lack of the blood-clotting prothrombin and are therefore especially prone to hemorrhage. Here, surgery is not without danger. Obstructive jaundice occurs when the adequate flow of bile from the liver to the intestine is so seriously interrupted—by gallstones, for example—that the patient is unable to absorb sufficient vitamin K from his food. By the simple expediency of taking a dose of *(Continued on page 723)*

# FACTS about the

By MILTON L. MILLER

Life can be extremely rich for a woman who is aware of her usefulness and of the best ways she may be able to help those she holds dear.

THE superstitions of past ages have not been given up so completely as we may think; in fact many of them reappear under the guise of semiscientific terms. As women pass the somewhat dreaded milestones of the ages of 40 and 45, many begin to worry about a mysterious period called "the change of life." In the past, they have heard such statements about Mrs. So-and-So as, "Don't you know what is wrong with her? Why she is so nervous and irritable, or why she complains about her health all the time? She is going through the change of life." It is astonishing what a variety of situations may be blamed on "the change of life." The atmosphere of "expecting the worst" at this time is engendered in many women by tradition and superstition.

To begin with, menstruation itself even to the normal woman has many superstitions connected with it. Since it is a periodic event, any change in its regularity produces some concern. When a period is missed, or when it is especially painful, which not infrequently happens as a result of mild emotional upsets, it is often felt that there is something seriously wrong. Many women do not talk about these things but

# MENOPAUSE

worry about them in secret. Consequently, as the menopause approaches with its usual alterations in the menstrual function, many women become panicky about what is really a normal physiologic event. The phrase, "change of life," as the common term for this biologic event is perhaps an unfortunate one, since it is connected in the minds of many normal women with a period in which physical and emotional discomforts are anticipated. The normal healthy woman may accept fallacious beliefs about the mysterious nature of this period with vague misgivings and doubts. Exactly what is she afraid of? Let us face the facts.

A common attitude toward the menopause is that it is in some way connected with the possibility of grave mental illness. It can be said at once that a woman who has had a previously good emotional adjustment need not fear such an eventuality during this period. It is now evident that entirely too much emphasis has been traditionally placed on the effect of the presence or absence of menstruation on the emotional life of women. It is not an uncommon belief that the fulness and completeness of young womanhood depends on menstrual activity rather than on development of the personality. It is as normal and healthy to stop menstruating at a certain period in development as it is to begin it at a certain period.

All human beings in their growth go through certain great periods of biologic development. The first and perhaps greatest change is to be born, to have to breathe and take nourishment rather than be nourished in the mother's body. Then weaning and learning to walk are tremendously important events for the young child. In every one of these stages there are two tendencies: one to progress, to develop the new capabilities and one to go back to the earlier way. Newborn infants sometimes have difficulty in breathing and in learning to feed. Weaning also is a difficult period. Learning to walk is fraught with difficulties, because children do not want to give up the privilege of being carried around. With adolescence comes the enjoyment of being grown up, being more mature, but also the obligations of maturity. Soon the young man and young woman have the privileges but also the duties of being no longer children but parents. And then the woman goes on to a still further phase; her child-bearing function is past, but emotionally she has an important function in her home and in her community. She wishes to go back, to be a younger woman again, wishes her children were little tots again and that she were younger. But also there should, in a normal woman, be the urge to go forward, to realize that she has grown in understanding and maturity and to take pleasure in seeing her children growing up and her tasks coming to fruition.

The approach of middle age, with its accompanying biologic changes, is often but not universally connected with the idea that woman's charm and physical beauty are about to undergo an unwelcome change. The interruption of the menses may normally be associated with certain new mild physical sensations and a vague feeling of uncertainty, tension and a tendency to get perhaps a little irritable, perhaps a little moody and difficult to get along with. But I want to emphasize that a normal woman may experience no marked physical or emotional disturbances whatever during this period, provided her physical condition is good. More intense symptoms may be connected with specific psychologic problems which manifest themselves first at this period but which may have always been in the background. I shall illustrate by citing a few examples.

A charming, lively woman reacted to the change of life with some noticeably increased irritation toward her pretty daughter, who was quite popular but who had never been as attractive as her mother. The mother had known that, and she suddenly became extremely sensitive to the remarks of her friends about her daughter's charm and good looks. She began to feel uneasy, a fear unsubstantiated by any out-

Normal women need have no fear at the approach of the mature period.

ward evidence that she herself was losing all her attractiveness. What had happened here was that the mother unconsciously envied her daughter's biologic position in life and felt some resentment at the loss of her own childbearing function. Her envious reaction toward her daughter made her feel inferior. Since she had always taken such great pride in her own charms, it was difficult for her to accept the present phase of her life. She began to feel that she was never quite so popular as she had formerly thought, and at the same time she became increasingly sensitive to her husband's attentions or what she imagined was the lack of them. This started a vicious circle of irritability and tension in the family. In this connection it is of some importance to remember that in the fifth decade men too undergo some change in sexual function. In both men and women there is apt to be an increase of sexual drive at this time, and it should be handled in a mature manner, rather than indulging in activity which has labelled this period for some individuals "the dangerous age." You may have seen mature women who wanted their sons to think that they were as attractive as the sons' girl friends, for instance.

Unless family problems, as well as problems connected with the increase of sexual desire at this time, are taken into consideration, the marital partner may become the object of unjust criticism. Feelings of irritability and dissatisfaction are apt to spread in a household where they have gained entry; but these feelings should be checked before they grow.

Often this period is associated with the time when the woman comes to take the place that her own parents once took. Many women often complain that they are besieged on all sides by requests for advice and help. As one woman put it, "I have suddenly realized that I became the matriarch in the family." She was referring to the position in the family she took when her own mother died. The reaction to the illness or loss of a parent at this time and the necessity to step into the parent's place sometimes brings conflicts with it. Let me illustrate what I mean:

A previously healthy woman, who had usually been in good spirits, although inclined somewhat to mild mood swings, went to her physician for help because she noticed that she was unduly concerned about some vague physical sensations associated with the menopause. It soon became evident, however, that she often felt sad, gloomy about the future and was less efficient in dealing with her daily responsibilities. She had felt this way for the last few months. She had no idea what might have been wrong but vaguely attributed her frame of mind and her physical symptoms to the menopause. The discussion about her family relationships brought out an important and interesting fact. About the time of the beginning of her difficulties, her mother had been taken seriously ill. Althought she recovered, she found it necessary to lead a semi-invalid life for an indefinite period. What had happened here was as follows: She had been much more concerned about her mother's illness than she realized. In the past she had also been closely attached to her mother but at the same time had some resentment to what she thought of as her mother's tendency to dominate her. When her mother became ill, at the time when she thought that she was experiencing some new physical sensations associated with the menopause, it made a much greater impression on her than ordinarily might have been the case. She was worried, felt guilty, was sorry for her mother and had such thoughts as this:

"It is terrible that my poor mother is suffering so when I have such a nice family and many pleasant things and a comfortable income. I really do not deserve all this; after all, there are many things I have done, many times when I have been impatient toward my mother for no just reason."

At this point the patient began to think of herself as in her mother's place, experiencing to some degree her mother's illness. By what we call the mechanism of identification, she assumed in her mind some of the characteristics of her mother's illness. She consequently felt uncomfortable and sad. When her past relationship with her mother was discussed with her and when she understood how "she took on" her mother's symptoms, because of her guilty feelings about being well when her mother was sick, her sadness and gloomy spirits as well as her aches and pains vanished.

Often, women react to the approach of the menopause with an overintense, energetic attitude about the affairs of the home, perhaps their husband's business affairs, their friends' affairs and so forth. It appears as if they were trying at all costs to convince themselves by a kind of ostrich-like reaction that they fear no loss of capacities, no diminution in physical attractiveness. This exaggerated reaction, which again sometimes manifests itself in a certain domineering attitude, is an attempt to overcompensate for hurt pride, all of which is due to the feeling of diminished sexual function. Unwittingly, this increased drive to dominate situations, the drive for mastery, often provokes antagonism in *(Continued on page 740)*

# The Doctor

**By E. O. LAUGHLIN**

Some two score years ago when I was young,
His picture on my office wall was hung—
"The Doctor." Still I love to study him,
Though faded are his features, now, and dim.
Perhaps it's partly that I do not see
As clearly as of old, but still to me
He stands the master of our healing art,
The doctor with an understanding heart.

He did not have our armamentarium:
Serums and vitamins were yet to come.
No laboratory aids to diagnoses,
No triturates in tabulated doses;
The world was skeptical concerning germs,
But nearly every mother's child had worms.
Flies and mosquitoes played their deadly role,
And typhoid and malaria took their toll.

The picture: A dark, poorly furnished room,
A coal oil lamp accentuates the gloom
Of lurking shadows, where a little girl
Lies sleeping; on her brow a yellow curl,
Her wan hands limply folded on her breast.
She has been very ill. Now she's at rest
At last. No longer is she wracked with pain:
She sleeps—but will she ever wake again?

The mother, giving way to grief and fear,
Weeps with her face hid on her arm, while near
The father stands and desperately seeks
To read the doctor's mind. Nobody speaks—
Hour after tedious hour no word is spoken.
Only the mother's muffled sobs have broken
The stifling stillness. Shadows hold their breath
To watch and wait the grim approach of Death.

The doctor, sitting by with hand to chin,
Waits, too—waits calmly . . . Did he lose or win
The battle? Through these many changing years
I've wondered, sharing all their hopes and fears.
There were no nurses in those days to aid
The doctor; when the crisis came he stayed.
While there was life, his vigil never ceased,
Nurse and physician, comforter and priest.

Yet I have faith the little sufferer
Got well. Somehow I've come to think of her,
A child, a school girl, then a woman grown,
With children and grandchildren of her own,
To whom she tells, when somber shadows fall,
About the scene depicted on my wall,
And how the doctor played his noble part—
The doctor with an understanding heart.

***Tremendous strides have been made in decreasing infant mortality, but the largest single factor, malformations at birth, still defies the wizardry of modern science.* WILLIAM I. FISHBEIN *tells here what has been discovered about premature births and diseases prominent in the newly born.***

# Deadly Disease

DEATHS which occur within a few days after birth result particularly from the diseases of early infancy and from malformations which are present at birth.

In 1938 these two causes accounted for 61,444 infant deaths, a total of 52.7 per cent of all the deaths of infants under a year of age.

Since 1916 the death rate of infants under 1 year of age in the United States has been reduced by more than half. But during this period, the death rate of infants under 7 days of age has been reduced only 10 per cent. Obviously our efforts to save life in infancy may now well be focussed particularly on this group.

### *Congenital Malformations*

At present, specific methods of attack for preventing malformations of the infant in its growth before birth are not available. While it is possible that constrained positions of the infant in the uterus before birth may be responsible for abnormalities in the bones, the vast majority of all such deformities are probably due to much less obvious causes. Such malformations may affect practically any part of the body. Defects of the nervous system and heart account for the majority of the deaths which occur as a result of congenital malformations.

Malformations appear to be more common in the offspring of older mothers and mothers who have had a number of children previously. The incidence of malformations seems to rise rapidly after the fifth child. The rate of such malformations in the white race is twice as high as that in the Negro race. It has been claimed that the occurrence of one congenitally malformed baby predisposes toward another; this has actually occurred in about 10 per cent of the cases. The exact effect of heredity in congenital malformations has not yet been definitely determined.

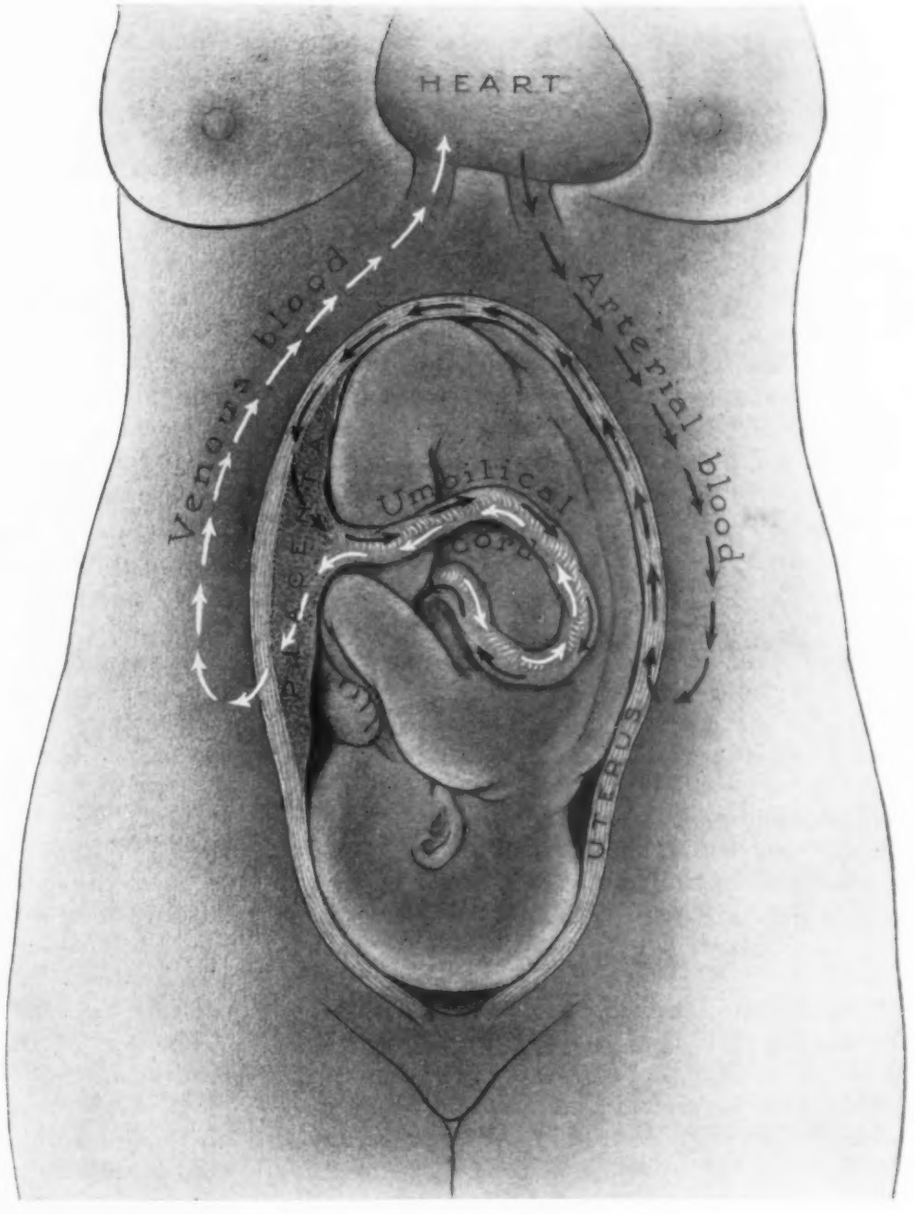
### *Diseases Peculiar to Early Infancy*

While measures to prevent deaths from congenital malformations are at present useless, much has been done in the last five years to reduce the number of deaths from certain of the causes classified as diseases peculiar to early infancy. This group includes premature birth; injury at birth, such as hemorrhage in the brain; asphyxia, and certain infections.

Premature births comprise from 10 to 20 per cent of the total number of births; prematurity either alone or complicated by other conditions is responsible for about 60 per cent of all deaths within the first twenty-four hours and for 45 to 50 per cent of the mortality in the first month of life.

Premature births may result from exhaustion, strain or injury to the mother, from the poisoning of the body during pregnancy due to inability to excrete waste properly or acute infections in the mother. Acute conditions in the abdomen, particularly those requiring surgery, chronic infections such as syphilis and nephritis or kidney inflammation, as well as tuberculosis, heart disease and diabetes, all may be responsible for premature births. Malformations of the fetus, in addition to certain abnormal conditions affecting the afterbirth or membranes, are additional causes. There is a large group of instances in which no cause can be discovered for prematurity.

# Number 7—




The position of the fetus in the mother's womb, illustrated in simplified fashion, shows how the infant is nurtured in the prenatal stages of its development. Congenital diseases and improper support during pregnancy are two of the major causes which produce malformed progeny.

Seventy per cent of the mortality of premature infants occurs during the first twenty-four hours, a figure which is about double the rate for full-term infants. Among the most frequent causes of death in these premature infants are brain hemorrhage, chilling, pneumonia and ill-advised methods of resuscitation. In about half the cases of prematurity, toxemia of pregnancy, infections or abnormalities of the after-birth occur. While these disorders are not always preventable, their early recognition and expert treatment may save the lives of both mother and child.

Serologic tests for syphilis, made early in pregnancy, would give an opportunity for treatment of mothers, thus aiding in the prevention of premature births as a result of this disease. The temperate use of analgesics, or pain-relieving drugs, and oxytocics, which are drugs that cause the uterus to contract, may also aid in the reduction of the number of deaths from prematurity.

Proper treatment of premature infants immediately after birth includes the provision of adequate heat by means of an incubator or a heated bed, the supplying of oxygen, the prevention of infection and the provision of breast milk for feeding. These measures will also help in saving the lives of many prematurely born babies.

The premature infant is particularly liable to undergo brain injuries. The exact cause for the frequent hemorrhages in the brain in these babies is not clear. It is assumed that because of the incomplete development, the blood vessels may be fragile and easily injured. Obviously, prolonged labor or the use of instruments during delivery may be contributing causes for such brain injuries. Possibly also because of nutritional deficiencies the blood of the infant does not contain enough of the substances necessary for quick clotting.

Excessive loss of heat from the body of the premature infant is caused by the relatively large skin area in proportion to the body weight. There is also a lack of fat under the skin, and the heat-regulating mechanism of the body is probably incompletely developed. The use of an incubator or a heated bed is necessary to keep the body temperature up to normal.

It is also extremely important, in the care of premature infants, to avoid any unnecessary manipulation. The infant should be removed from the heated bed only when absolutely necessary. When the baby is taken from the bed, the room temperature should be 80 F. or more. Attendance by nurses specially trained in the care of premature infants is also important, and the unceasing care of the physician cannot be too highly emphasized. Incredibly small children have been successfully reared by the application of these principles.

### *Injury at Birth*

The obstetrician remains largely responsible for the prevention of brain and other injuries at birth. Most birth injuries are of mechanical origin, that is, they result from a continued pressure during delivery or from too rapid delivery or operative interference. Injury to the skull contents may ensue when the normal elasticity of the skull and its contents is overtaxed by sudden force. In births in which the breech instead of the head comes first, brain injuries, as well as injuries to other parts of the body, frequently occur.

Unfavorable methods of resuscitation, such as swinging the baby through the air, may be responsible for intracranial bleeding. A minimum of interference with normal birth and the prompt use of the proper operative procedures, when indicated, will do much to reduce the mortality from birth injuries. Cesarean operations may be wise for an elderly woman having her first baby, and such operations also are often necessary when there is some obstruction to normal birth. Head injuries may also become less common when medicines for hastening birth are used more judiciously.

### *Asphyxia*

Immediately after the birth of a baby the lungs must begin to function in order that the infant may be supplied with oxygen. Interference with this normal function of the lungs results in asphyxia. Circulatory disturbances also may produce asphyxial deaths. Impending asphyxia in the unborn baby may be indicated by a marked change in the rate of the heart beat. Persistent alteration in the fetal heart rate below or above 160 per minute is an index of impending asphyxia. At birth, asphyxia is best recognized by the general appearance of the infant. A so-called "blue baby" or an extremely pale infant may be suffering from one of several types of asphyxia.

If the asphyxia is not severe, little treatment may be required. However, the air passages must be cleared of mucus; it may be necessary to suck out the mucus with a soft rubber tube.

In resuscitating the infant, many physicians favor putting the baby into a tub half filled with water, heated to 110 to 115 F. Gentle stroking of the skin may be sufficient to establish breathing; artificial respiration, gently applied, may be used. A supply of oxygen, with 5 to 10 per cent of carbon dioxide should be used in every case requiring stimulation of the breathing mechanism; mechanical respirators are advocated by some physicians. Drugs which stimulate heart action have been found useful by others.

The use of pain-relieving drugs and anesthetics during labor is claimed to have a particularly important role in the production of deaths from asphyxia. Caution in their use, as well as judicious use of oxytocics, cannot be too strongly stressed. Pain-relieving drugs depress breathing, and when administered to the mother, spread rapidly into the circulation of the fetus during early labor. This may not be of any great importance, but later in labor the dosage of these drugs, which may serve to quiet the mother, may affect the infant to such a degree *(Continued on page 723)*

# WE CALL IT *Allergy*

MRS. SMITH has asthma every time she goes to a picture show. Will Jones has a migraine headache every Wednesday night after visiting his fiancé. A waitress breaks out with hives regularly on Tuesdays and Fridays. A ship's captain suffers from hay fever while at sea and finds relief only when he comes ashore.

These peculiar incidents are no stranger than thousands of others among the 13 million Americans who are victims of the mysterious backfiring of the human body's protective system which we call allergy. But these four are fortunate. The offending substances which caused their troubles have been isolated and their sufferings have been relieved. In each instance, the "allergen" proved to be some commonplace substance—harmless in itself and even healthful or beneficial for others. Yet for each of these hypersensitive persons, the allergen had the effect of a poison.

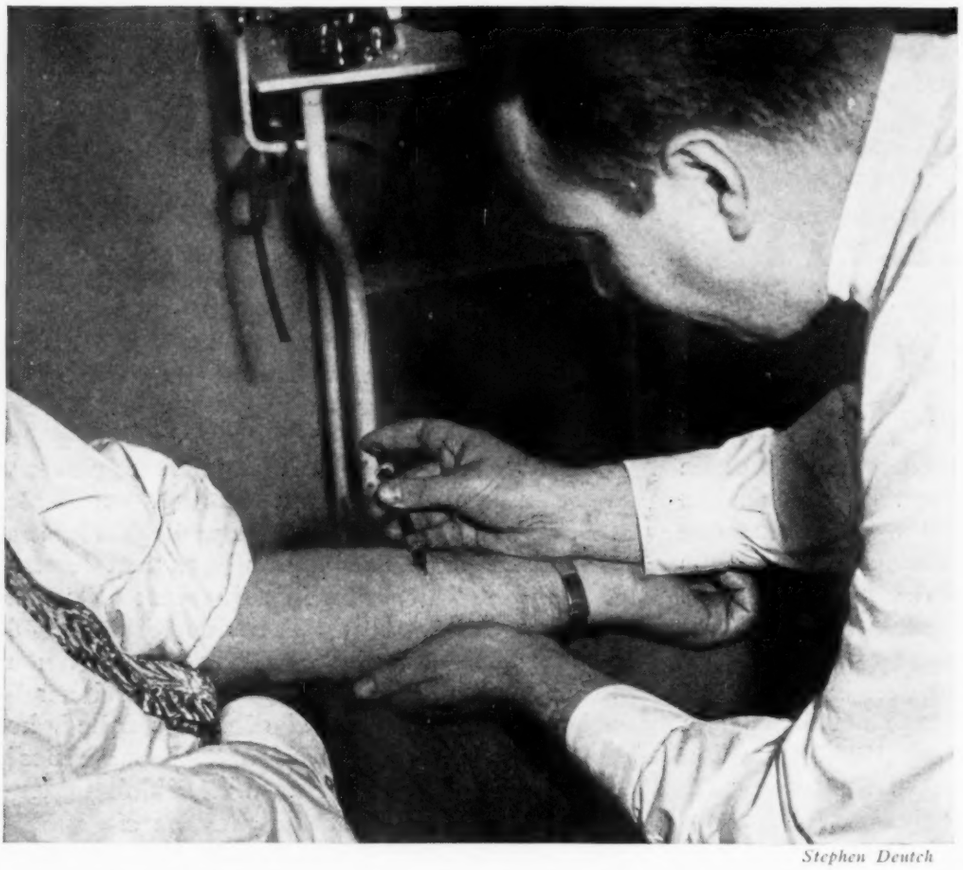
***One out of every ten Americans has a major form of allergy. Out of the thousands of possible substances that may cause hypersensitivity, the physician must determine which substance or group of substances is responsible.* LOIS MATTOX MILLER *tells about a sleuthing task that makes the exploits of story book detectives seem like mere child's play***

Mrs. Smith reacted violently to pyrethrum, a safe chemical disinfectant which is sprayed in theaters to protect the health of the patrons. Will Jones was found to be sensitive to his fiancé's face powder. His headaches ceased when she switched to unscented talc. The waitress was allergic to shrimps, served regularly on Tuesdays and Fridays in the restaurant where she worked. She never touched or ate them; the kitchen fumes were enough to cause skin eruptions. The captain's case was astounding. He was allergic to the kapok in his mattress and pillow aboard ship. When ashore, he slept on hair-filled or feather-stuffed bedding, and his hay fever disappeared. It is much more usual to find victims who have to sleep on kapok because they are sensitive to feathers or hair.

Doctors have long known that some persons were susceptible to certain seemingly incurable ills. You may recall Grandmother's rhinitic headaches or Grandfather's persistent "stomach trouble" or Father's skin blemishes that never went away. The family doctor struggled valiantly to help them but in vain. When the treatment that should have helped headaches or gastrointestinal disorders failed, he talked of "idiosyncrasies" and "peculiarities" which he usually confessed he didn't understand.

About twenty years ago, doctors began to call such idiosyncrasies "allergies." Giving them a new name did not help, but the study of such peculiarities helped a great deal. Today the doctor can detect your allergy and relieve the condition. Your children are doubly fortunate. They will probably inherit your allergic tendency; but, knowing that, you are forewarned. By careful watching and early treatment, the children can now be spared chronic ailments that otherwise might last a lifetime.

This allergy is not a disease. It is a physical condition, inherited in about 75 per cent of the cases, which causes the victims to have explosive reactions to ordinarily harmless, seemingly innnocent substances. Various persons react differently and produce the allergic symptoms which we recognize as hay fever, hives, some types of asthma, eczema, colitis and a number of other diseases. The authorities say that over 10 per cent of the population may be called major allergics, meaning that their symptoms are persistent and severe. Another 50 per cent may be classed as minor allergics, who have had some symptoms to a minor degree or for a brief period. Probably,



*Stephen Deutch*

**For injections in skin reaction tests, the physician uses specially prepared extracts of common substances.**

says one doctor, allergic persons are the rule, and the nonallergics merely fortunate exceptions. If we all lived long enough, he believes, and were exposed long enough, we should develop some degree of allergic sensitivity.

Only recently have doctors been able to give us a clear picture of what happens when we are allergic. There are still some dark spots, some theories to be proved or explained. But from the layman's point of view, the picture is fairly complete. It depicts a strange drama of chemical warfare waged amid the microscopic cells of the human tissues.

The body is endowed with a remarkable protective mechanism. Substances that might be harmful to the system are excluded or repelled by the skin and the respiratory tract, or they may be chemically changed and neutralized in the digestive system. But when some foreign matter enters the system, unchanged or unassimilated, there are explosive consequences. Thus allergy has been described as "protection gone wild."

Consider the allergic individual. In the beginning he seemed normal. He was not yet sensitized. Then, sooner or later, in youth or middle years, some particle in the food he ate, the air he breathed or the things he touched, slipped past the body's first lines of defense and entered his system. He was unaware of the incident at the time. The enemy was within; yet, seemingly, nothing happened. He experienced no symptoms of hay fever, asthma or skin eruptions. Actually, the first skirmish had taken place, and the inner defenses of the body had won.

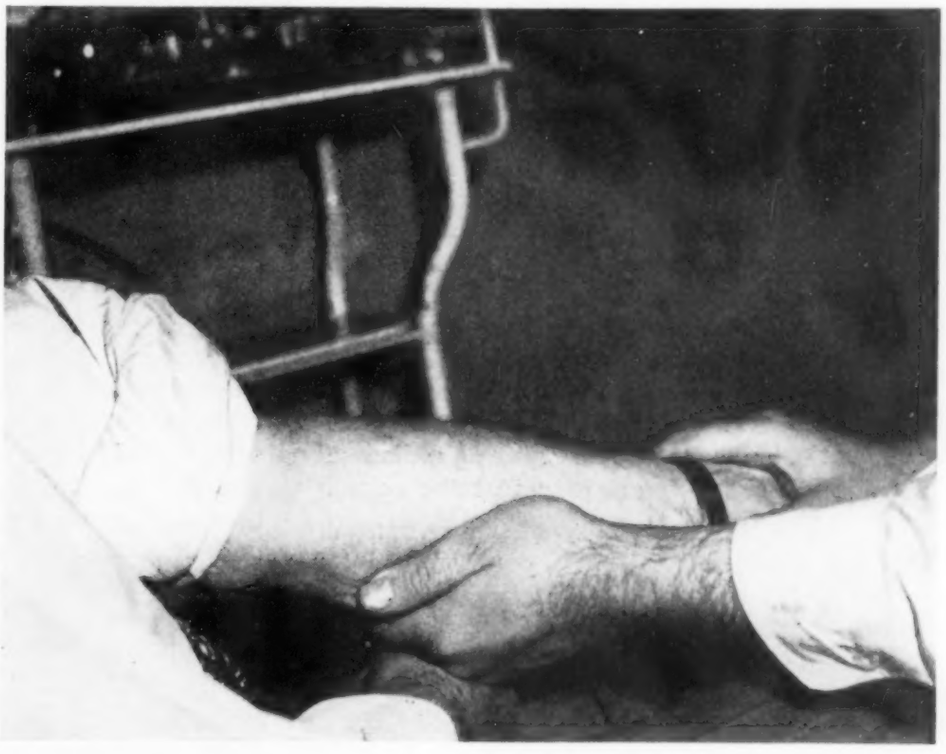
Here is what happened: That minute foreign substance, once inside, started on a cruise through the body fluids looking for trouble. Trouble is what it found. For as soon as this foreign substance entered the body, the microscopic cells of the body went to work, furiously manufacturing defense materials and discharging them into the blood stream. Chemically, these new materials called antibodies were created for a single purpose: to meet and destroy this particular foreign invader. Thus the initial battle between the invader, or allergen, and the antibodies took place in the blood stream; the foreign invader was destroyed, with no damage to the body.

But the alarm had been sounded, and the body had declared a state of war. Troops of antibodies still poured into the blood stream. Then with no foe to give battle, the alarm subsided, and the process ceased. But the antibodies still cruising the blood stream had to be mustered out. They retired to the sidelines and attached themselves to other body cells.

There they remained, live and potent fighters, created for a single purpose. At that point the allergic individual became sensitized.

Now the person inhales or ingests or absorbs a second dose of his allergen. This time the invader encounters the veteran antibodies, not in the blood stream, but attached to the cells of the body tissues. There the epic battle may be fought anew, the allergen being again destroyed. The battle scars are the allergic symptoms, the diseases which we call hay fever, asthma, skin and stomach disorders.

More specifically these symptoms appear in what physicians call the "shock tissues," the smooth muscles in the nose, the air tubes of the lungs, the stomach, intestines, liver and blood vessels. The smooth muscle spasms in the nose produce hay fever; in the bronchi or air tubes



The small raised area surrounding the second nodule from the left indicates a positive allergy reaction

The two lower extract injections of dog hair and ragweed produced positive reactions.

they bring about asthma; in the intestines, colitis or diarrhea. The shock tissues in the blood vessels or capillaries become sievelike and leaky, producing hives, eczema and other skin eruptions.

Many doctors engaged in allergy research narrow down the immediate cause of these allergic symptoms to a particular chemical action. Experimentally, they show that the effects of a chemical called histamine on the shock tissues are spasms and a softening of the smaller blood vessels or capillaries. They also know that histamine is naturally present in the body cells. The theory is that when the conflict of antibody versus allergen takes place, the cells are damaged, the histamine leaks out and produces the familiar reactions in the adjacent shock tissues.

But by now the allergy victim is suffering. What his symptoms are—whether he develops a respiratory, skin or intestinal disorder—depends on how far the invading allergen traveled and where the battle took place. The patient wants his symptoms relieved. The modern doctor, however, recognizing a disease of allergic origin, wants to get at the cause. He begins to look for the allergen. He is faced with a herculean task.

Out of the hundreds, perhaps thousands, of possible substances, the doctor must find the one or the group to which this patient is allergic. Every known type of matter—animal, vegetable, mineral—and such physical agents as heat and cold, are suspects. To find this culprit calls for sleuthing that makes even the most improbable exploits of story book detectives look like child's play.

After a careful study of the family history, the doctor begins a broad check-up on the patient's environment, living habits, diet and occupational exposures. If there are pets in the house, they will be removed in order to check the possibility of animal danders. The patient may have to live or sleep away from home for a while, so that the effects of changed environment can be observed. He may be placed on a diet so that the field of food allergies can be explored. If, as a result of these first tentative maneuvers, his symptoms improve or disappear, the field of possible allergies is narrowed considerably.

Next the doctor may apply one of two methods: the elimination diet or skin testing. In the first, a basic diet is prescribed, foods are added or eliminated, and the patient keeps a careful record of his reactions. Eventually, his hives or asthma may decrease when he abstains from certain foods, only to recur when these foods are returned to the diet. Thus the offending food or foods may be detected.

For skin testing the doctor uses prepared extracts of common substances—vegetables, fruits, grains, milk, meats, animal danders, tobacco, chemicals and pollens. Beginning with the likeliest suspects, he induces the allergen-antibody conflict in miniature on the body surface by introducing one substance at a time into a skin puncture or a scratch or by intradermal injection. Remember that theoretically the antibody will react only to the particular allergen for which it was created. So if the substance is innocent, nothing should happen. If it is an allergen, on the other hand, the conflict takes place; and the positive reaction appears in a single hive or wheal on the skin. The experienced allergist is aware that these skin tests are not 100 per cent reliable, and he has to watch for false positive or negative reactions.

Frequently, a lucky strike will reveal the true allergen in the early testing. Certain types of allergies, such as those related to the pollen group, are comparatively easy to test and define. On the other hand, considerable time and perseverance may be required of both the sufferer and the doctor.

One patient of a pioneer allergist was a young man who had suffered from asthma for fourteen years. In 1917 he joined the army, and was free from asthma for the duration of the war. When he came home, his asthma returned. Later, when he took prolonged business trips, it disappeared again. Everything suggested that some substance in his home environment was responsible for his discomfort. He was tested with every known substance, from pollens and animal danders to foods and drugs. Extracts were made from the horsehair in his mattress, the feathers in his pillow, the rug on his floor. All tests produced negative results. Finally the doctor ordered him to bring in the vacuum sweepings from his room. An extract made from the sterilized debris was injected. The positive reaction showed that he was allergic to house dust, and for the first time this common substance was recognized as a possible allergen. It has since been found to be one of the most common.

Thus, by elimination diet or skin tests, and frequently by a combination of the two, the doctor determines the allergen. Now two courses of treatment may be available. He may be able to desensitize the patient by administering small doses of an extract made from the allergen and *(Continued on page 720)*

# REFINEMENT of FOOD

## and its effect on our diet

*The second of a series of articles by*
***ELIZABETH M. KOCH,***
*concluding her informative discussion of the vitamin $B_1$ complex and its relation to the average citizen's diet*

IN STARTLING contrast to these modern diets are those in use before 1840. Investigators have estimated that the vitamin $B_1$ content of seamen's and soldiers' rations as well as Poor Law and prison diets in use in England between 1615 and 1838 was from 600 to 1,230 International Units. Why was it that a century or two ago the diets of Parish poor supplied an abundance of this dietary essential, while modern diets scarcely satisfy the minimum demands? The answer lies largely in the substitution of white flour for whole cereals and the increased use of refined sugar. The United States now consumes annually per capita, flour from four bushels of wheat, and about 100 pounds of sugar. One hundred years ago the annual per capita consumption of sugar was close to 5 pounds and whole cereal products provided about 32 per cent of the total calories. Sugar does not provide any vitamin $B_1$. The calories supplied daily by these two foods a century ago carried in the whole cereals only an average of 600 International Units of vitamin $B_1$. The same number of calories now from white flour and sugar provides the meager amount of $B_1$ remaining in the refined flour.

These changes in the national dietary as a result of the sophistication of foods have been gradual and imperceptible even to students of nutrition. The sudden awakening to the health hazards involved has come with improved methods of determining vitamin requirements and the quantitative estimation of vitamin content in foods. In European nations most likely to feel the pinch of limited food supplies, comprehensive studies have been made of the vitamin $B_1$ content of wheat and wheat products. A summary of typical results taken from 68 reports was recently published by Alice Copping. The figures quoted emphasize the rapid decrease in vitamin $B_1$ content with increasing refinement of the flour, and the high concentration of this constituent in the wheat embryo or germ. Another striking fact brought out is the variation in vitamin content of different samples of wheat. The production of cereals with a high vitamin value may present a new problem for agronomists.

| | I. U. of vitamin $B_1$ per ounce |
|---|---|
| Wheat berry | 34.0 to 97.5 |
| Wheat germ | 140 to 600 |
| Stone ground flour | 45.4 |
| Flour of 90% extraction | 34.1 |
| Flour of 82% extraction | 28.4 |
| Flour of 75% extraction | 11.4 |
| Flour of 70% extraction | 4.3 to 10.5 |
| Flour of 60% extraction | 2.8 to 6.8 |
| Flour of 42% extraction | 0.0 |
| Bread from whole wheat flour | 21.3 to 36.9 |
| Bread from white flour | 3.4 to 8.5 |

In these studies the emphasis has been placed upon vitamin $B_1$. The other B vitamins cannot now be evaluated. So little is known of their deficiency effects and the daily requirements. There is every reason to believe that

these less well known constituents are as important to health as those dietary factors already established as essential. Such information as is available indicates that the loss in milling is fully as great for the other components of the B complex as for vitamin $B_1$.

The conclusive proof that the changed food habits of this generation are exerting a deleterious effect upon the national health is coming from the medical profession. Until recently beriberi has been looked on as an Oriental disease associated with a diet consisting largely of polished rice. But publications in *The Journal* of the American Medical Association this past year or two have given impressive evidence not only of the common occurrence of beriberi in this country but of pellagra, scurvy, and a newly identified riboflavin ($B_2$) deficiency. Careful investigation has shown that the primary cause of the development of these deficiency states was failure to consume an adequate diet. While these diseases in characteristic form have become familiar to practitioners, it is now recognized that much more general are manifestations of a subacute deficiency of not one but several dietary essentials. A diet which is inadequate in vitamin $B_1$ is usually deficient in other factors in the B group. There is the further possibility that it is also incomplete with respect to vitamins A and C as well as iron, calcium, phosphorus, and even protein.

Persons suffering from early or subclinical deficiencies of the water soluble B vitamins have been described as "neurasthenics." Their complaints are vague and various, the sort characteristic of people in "poor health." They have no appetite, they lose weight, and feel weak. Indigestion and dyspepsia are common and sometimes associated with a vague, burning sensation described as "heart burn." Constipation or cramps and diarrhea are equally typical. The patients say their "nerves are on edge," they are irritable, apprehensive, depressed, and unable to sleep; they are subject to crying spells, flights of ideas, mild mental confusion, and forgetfulness. There may even be a breakdown of morale. These are the ailments which physicians have previously been unable to diagnose.

Thus an idea first suggested in 1897 by two Dutch physicians, that disease might not always be caused by a positive factor such as a toxin or a bacterium, but by lack of a necessary factor is being confirmed on a scale undreamed of by them.

There are now available the pure vitamins thiamin, riboflavin, nicotinic acid amide, ascorbic acid, and vitamin A or carotene for treatment of berberi, the peculiar skin lesions characteristic of riboflavin deficiency, pellagra, scurvy, and xerophthalmia and night-blindness respectively. But physicians are agreed that general improvement in health is more striking and more permanent if the patients are at the same time made to consume a well-balanced and liberal diet. Yeast, rice bran, or wheat germ are extremely valuable as daily supplements. These are three highly concentrated sources of the B complex. In the case of undernourished infants and children, addition of wheat germ or whole cereals to an otherwise good diet has brought about surprising weight gains as well as marked improvement in general health. It has been suggested that there is a relationship between the decreasing vitamin B content of modern diets and the increasing malnutrition, nervousness, constipation, and possibly other gastrointestinal disturbances in children. Many pediatricians recommend such B rich supplements as a routine procedure in infant feeding just as orange juice and cod liver oil have been used to introduce vitamins C and D.

There has naturally been considerable agitation for the "fortification" of such foods as white flour, polished rice, candy, soft drinks, and beer with pure vitamins. Knowledge of what vitamins are necessary, how much of each is optimum is still in its early beginnings.

The complete return to whole foods, especially whole cereals would entail a reorganization of the business of food production and distribution. Nevertheless, a more general use of whole cereal breakfast foods and of whole wheat and whole rye breads is possible and should be encouraged. The addition of properly sterilized wheat germ to bread and other bakery products has been recommended. Wheat germ with the oil removed is quite stable and can be added to many foods in their preparation. The defatted wheat germ still contains all the B vitamins and minerals. Some other vitamin enriching foods are the organ tissues such as liver, kidney, and heart, lean pork, eggs, molasses, peanuts, and dried beans. Many persons will need to acquire a taste for foods they think they cannot possibly eat.

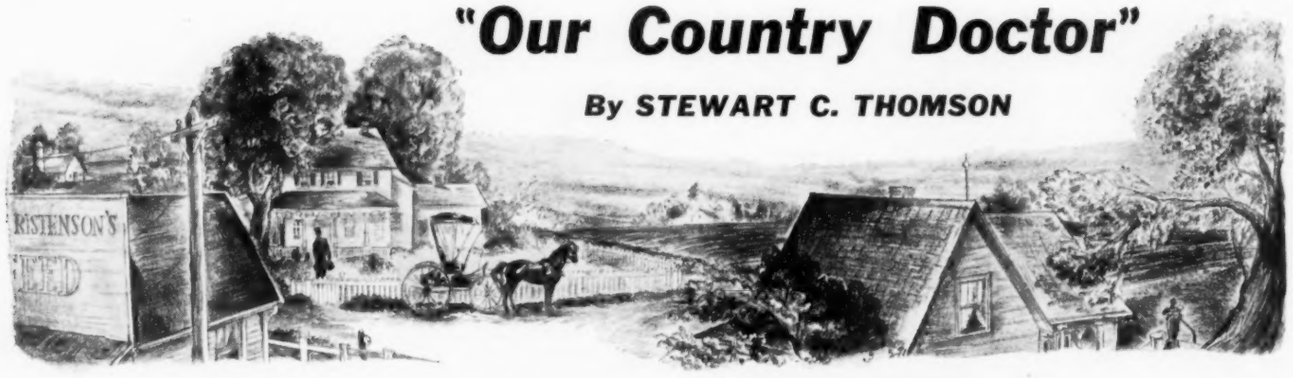
The presumption is strong that additional vitamins beyond those already known will be discovered to be indispensable in human nutrition. Vitamin $B_6$ and pantothenic acid are essential in the diets of rats, dogs, pigs, and chicks. In the rat it appears that fat synthesis and distribution in the *(Continued on page 718)*

Photograph by HYGEIA contest winner EDWARD W. WINGARAS.

## Debutante—1955

# "Our Country Doctor"

By STEWART C. THOMSON



ON A SUNDAY afternoon a few summers ago hundreds of persons gathered in a little town, Byron, in the Rock River valley of Illinois. They had come to witness the unveiling of a memorial.

There have been hundreds of similar gatherings to commemorate events in local or national history, but Byron's ceremony on Aug. 1, 1937, attracted nationwide interest. The monument was being dedicated to the memory of a man who had been loved by several generations in that community and who had met a tragic death while pursuing his duties. Metropolitan dailies told the story of his life and of the simple and sincere ceremonies arranged by friends to express a love and esteem which was deep and strong. Front pages and editorial columns gave space to the occasion. This granite boulder was a tribute to a country doctor.

In a large measure Byron's ceremonies expressed the sentiments of thousands of persons who dwelt in cities, villages and on farms. Many a person who read of this incident recalled the country doctor who had welcomed him into the world, who had been his friend and confidant in boyhood and who had continued to take a kindly interest in him.

The doctor whose memory was honored on this occasion had been born in that community and had returned from college to the country. For thirty-four years he had lived a strenuous life as a busy physician. He never had any designated office hours. His office was in his home, and he was always accessible. At any hour of day or night a knock might be heard at the office door. No one was turned away.

Again and again he had given up his hours of rest to journey miles on a dark night over muddy roads. His mud-spattered car was as familiar in later years as his mud-covered buggy had been in the early years of his practice. Regardless of the weather, he had never failed to reach his patients. Often it was necessary for him to ride across fields on horseback; when roads were impassable during the high water of the spring months, he had to cross Rock River in a rowboat. He had to ford swollen creeks sometimes. Frequently he had to leave his car on the gravel road and go by foot across fields or down muddy lanes. He found some way to reach his patients. During stormy weather he was many times the only person on the road. When the farmers saw his lantern on a dark night, they knew that the doctor was on his way to bring his aid and encouragement to some family.

His coming into a home brought not only medical skill. Cheerfulness, thoughtfulness and reassurance from a vibrant personality had brightened scores of homes when hope seemed almost gone. Many a night was spent with an anxious family who could not afford to employ a trained nurse.

One story is especially recalled in the community among the many that are told about this doctor. During the severe snowstorm of 1919 a call came from a farmer nine miles away. His wife had been injured. The farmers along the way said that the roads were absolutely impassible, but that if the doctor wanted to attempt the trip, he would find friends willing to help him. The doctor, who had never yet been halted by the weather, decided to make the journey. He started in a sleigh and even had to shovel through drifts to get out of his own driveway.

He had to cut through wire fences in order to cross fields where roads were drifted deep. Farmers along the way took care of his tired horses and hitched a fresh team to his sleigh. It finally became impossible even to use the cutter. For the last mile and a half the doctor placed his satchels over the horse's back, hung tightly to the animal's tail and walked through the drifted roads.

The patient had lost a large amount of blood, so the doctor stayed until morning to observe and care for her. All suggestions that he rest a few hours were in vain. North of town were some patients who needed him. The villagers at breakfast saw the tired physician and

his exhausted horse as they made their way between banks of snow on either side of the street. A battle had been fought and won that night.

The doctor was injured in an automobile accident in 1913 as he hurried to answer an emergency call. Passers-by picked him up and wanted to take him to the hospital, but the doctor stubbornly insisted that they take him where he had planned to go. A bit shaken, he dressed the patient's wounds and then collapsed. For the first time in his life he was himself a patient for almost a month.

The influenza epidemic of 1918 was a severe test of his strength and perseverance. For three weeks he had less than four hours of sleep a night, and that was often disturbed. He saw several of his life-long medical friends in neighboring communities succumb to the disease. His family and friends pleaded with him to refuse calls for a day and to rest. He scoffed at the idea. Business men of the village offered to drive for him, and although he thought it a sign of weakness to permit this, he consented. Because of their kindness, he was able to take short naps between calls.

His good cheer never left him, even during those days. His stock of stories in the homes he visited furnished the only ray of cheer. Relatives feared to come and care for the sick because of the nature of the epidemic. In many homes where all members of the family were stricken, the doctor took time to prepare food and even to bathe the patients. The sick eagerly anticipated his arrival, for his merry heart was in itself good medicine.

The doctor won and held the love of children by his absolute honesty with them and by his sincere interest in their conversation and in their activities. He had welcomed over 1,700 babies into the world during his practice. There were many families for whom he had been the attending physician at the birth of the parents and also of their children. Although there were scores of persons who could not even pay his modest fees, they received the same careful attention. Often he provided the money for necessities in such cases.

On an early autumn day in 1931 the doctor hurried home from the country to obtain supplies needed for another call. He had had no rest the two previous nights. As he crossed the railroad tracks, the eastbound train bore down on him. There was a crash, and those who lived near, hurried to the spot. There they found the doctor.

A few days later almost 1,500 of the doctor's patients and friends gathered in the late afternoon at a small country church, the kirk of his Scottish forefathers. Only a few of them could crowd within its doors. For over an hour they stood outside. Each person had some special reason for being there; no one had come out of idle curiosity.

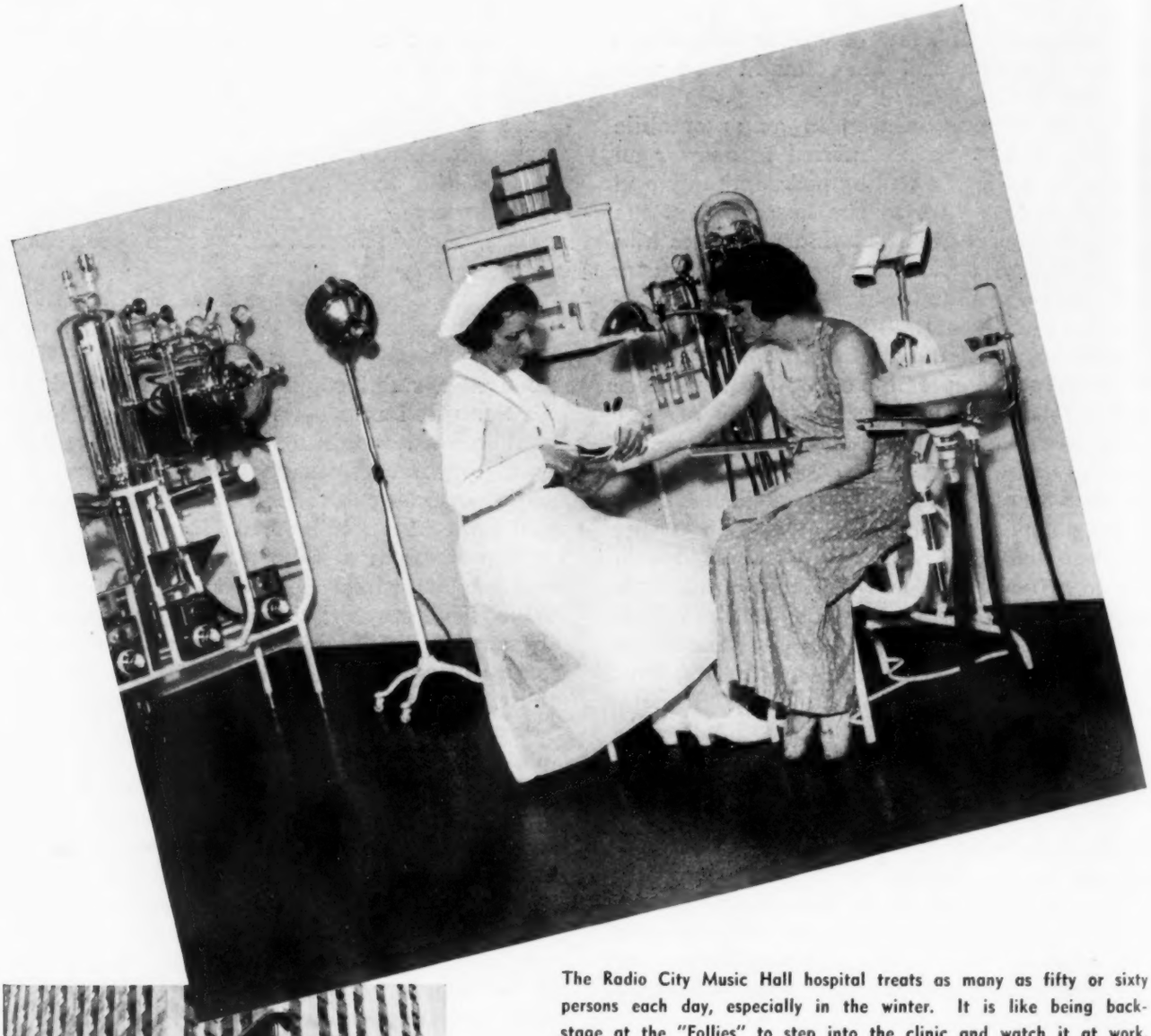
Near the door of the church stood a mother and a father with bowed heads. Clutching the father's hand was the small daughter who had been saved for them by the doctor. A stalwart young farmer stood a few feet farther down the walk. His first half hour of life had been precarious, and he was there that day because of the doctor's skill and efforts. Every family could have told its own story. Hearts and eyes were full, as through a narrow lane formed by his people the doctor was carried to his resting place in the country churchyard.

He has not been forgotten. The story of his life and his oft-quoted words have been remembered in many homes. In the hearts of his people he has a more enduring monument than the granite boulder. The memorial was erected on the school campus six years later by public subscriptions limited to 10 cents each. Today on the highway which passes through Byron, Ill., there stands a rugged, granite boulder with a simple inscription:

*In Loving Memory*
*of*
*Our Country Doctor*
*Stewart Craig Thomson, M.D.*
*Aug. 1, 1870 — Oct. 30, 1931*

*His Work Survives*
*Erected by a Grateful Community*

This doctor is only one of the thousands of men in the medical profession who have spent their lives as family doctors and who have walked in inconspicuous paths. The esteem manifested in the honor paid to his memory is a tribute to all who as physicians and friends have lived lives of rich usefulness.



The Radio City Music Hall hospital treats as many as fifty or sixty persons each day, especially in the winter. It is like being backstage at the "Follies" to step into the clinic and watch it at work.

Left:—An exterior view of New York City's far-famed theater palace skyscraper.

Right:—Interior scene in the main foyer. Near the public lounge is a First Aid station for patrons.

# Glamour Girl Hospital

By ETTA M. SEYMANS

THAT "the show must go on" seems to be the spirit behind one of the most unusual medical stations in the country, and probably the one which is "tops" in glamorous patients. Few of the thousands who visit New York's Radio City Music Hall each day know that it maintains a fully equipped hospital. It is to keep the hundreds of employees of this, the world's largest theater, in fit condition to serve and entertain its patrons that the Music Hall operates its own hospital.

You might think that there is little enough that could happen to theater people on the job. But when you realize that Radio City Music Hall has more than 600 persons on the payroll, the advantage of a medical staff devoted to their special care becomes more apparent. And when you divide the 600 into the various kinds of work they do, you can begin to understand the need for an emergency hospital, and you may even wonder how other theaters get along without them.

The hospital treats as many as fifty or sixty persons a day, especially during the winter. It is like being backstage at the "Follies" to watch the clinic at work. The great majority of the patients are the dancers, singers and other performers who make up the entertainment portion of the personnel.

The Music Hall has, in addition to its screen productions, four stage presentations each day. Famed are its Rockettes, the precision troup which appears in these productions, its Corps de Ballet, and its Glee Club. There are more than a hundred performers in these three groups, and there are also the specialty acts, which change from week to week; the seventy-five members of the symphony orchestra; the countless production assistants, directors, stage hands, wardrobe women, uniformed staff members, box office employees, secretaries and cafeteria employees.

All are not only invited but are constantly urged to make use of the hospital as soon as they feel any symptoms of illness. For the managing director of the giant showplace believes in the stitch in time that saves nine. That was the thought which prompted the opening of the hospital, simultaneously with the opening of the theater in December 1932.

It may also explain why, although the hospital is fully equipped to handle anything up to a major surgical operation, it seldom has anything more serious to treat than a sprained ankle.

The hospital is located seven stories above the world's largest stage. Accessible from the stage or dressing rooms by the house elevators, it is ready day and night to handle any backstage emergency. There is an emergency operating table, with a full set of surgical instruments. A registered nurse is on duty at

all times; a licensed physician makes daily visits and is on call throughout the day. The stage personnel provides most of the patients.

The curtain rings down on an intricate dance number. As the applause dies and the Rockettes turn to dash to their dressing-rooms for a quick change, one girl slips to the floor.

In a flash one of the girls reaches a backstage telephone. "Give me the hospital." The registered nurse on duty—there are three who share the assignment in eight hour shifts—answers and learns what is needed, and in a minute the nurse is whisked down the seven stories to the stage level, where she finds this pretty red-headed dancer who had not taken time to eat a full dinner and had found the strenuous dance too exhausting.

Back in the elevator and up to the hospital, the nurse puts the patient to bed. Her friend brings her robe and takes away her costume. Then she goes to get her some food. After an hour's rest, the dancer will be back in the line-up, none the worse for her experience.

When the last number of that performance is completed, other members of the cast enter the hospital.

"I guess I landed wrong on that last jump, nursie. Think you'd better strap it up?" This time it is a blonde Rockette who has strained her ankle muscles. Adhesive tape gives her ankle temporary support and she hurries off to dinner, after promising the head nurse to return in time to have the foot treated before the next show.

The next patient is a member of the Glee Club. He feels a cold coming on and has come to the hospital to have his throat sprayed. Then there is a stage hand who has picked up a sliver which has lodged deep in his finger. The hospital has a special spotlight which directs a strong, clear light exactly where it is needed. Soon the sliver has been removed from the workman's hand and the punctured skin protected by an antiseptic solution.

After an intricate new routine has been introduced among the dancers, the nurses are prepared for a rush of "charley-horse" patients, when many of the Rockettes will develop the same ache in their muscles. There is a demand for the liniment, the infra-red heat lamp and the massage table, to limber up in time for the show. When the Ballet girls break in new shoes, there will be a siege of blisters and a drive to prevent infection.

Colds bring many patients to the hospital, even though the Music Hall has taken almost unbelievable precautions to prevent them. The girls need not leave the building in bad weather; there is a cafeteria for employees in the basement where they can eat without removing costume or makeup. Across from the hospital there is a bright and cheerful dormitory with accommodations for eighteen girls, so that any who live in the suburbs or at a distance from the theater can stay overnight in cold or stormy weather.

Between shows they can travel by underground passages throughout Rockefeller Center, in which there are shops of every kind. Here they can buy anything they may need without going outdoors at all. There is an employees' clubroom with a library, game tables and easy chairs; and for recreation in good weather, there is a terraced roof.

Still, since the performers work hard, perspire freely, rush to get makeup off and dash out without first cooling off, many colds must be treated each day. Between shows the girls are urged to rest in bed and remain away from others to prevent a spread of the infection. Their temperatures are checked, and if anything more serious than a cold seems probable, the attending physician examines the patient. If he thinks she is going to be really ill, he will send her home.

The nurses also cover the First Aid station "out front" where patrons who become ill are treated. This station, near the public lounge, has its own emergency table, bed and bath. Here persons have been treated for headaches or upset stomachs. Occasionally there are more serious emergencies, such as insulin shock and attacks of epilepsy. Unlike some other theaters, the Music Hall has not yet had a baby born on the premises.

Undoubtedly, however, the members of the medical staff would take even that in their stride. They are ready for anything at the Music Hall hospital!

## A Doctor Needs a Garden

Complaining patients fill his day
And most of them too poor to pay;
But far away from office clocks,
He plants a garden in the rocks,
Where iris bloom—so straight and tall,
Wisteria climbs a garden wall.

No white coat here! His old blue shirt
Is torn and faded, streaked with dirt.
And as he trains a climbing rose,
He sees a baby's puckered nose.
A father's thanks, a mother's smile
Are things that make his day worth while.

By VERA BLOOD FLETCHER

Fish roe and fish fillets being examined for filth, decomposition, and parasitic infestation.

*In the following article some facts are supplied relative to harmful practices associated with the sale of candy. The confectionery industry is one of the largest in the country and serves a useful purpose in supplementing our diets. However, in the marketing of candy, as with other products, occasional harmful practices are developed against which the public needs to be guarded. The campaign of protection involves not only the kind of regulations that are established by governmental agencies, but also a recognition of the hazards and adequate education concerning them. The readers of Mr. Winters' article will find their attention called to many simple observations which, however, may be life-saving.*—ED.

**By S. R. WINTERS**

SUCH SIGNS could logically be posted at the office doors of the Food and Drug Administration in the Department of Agriculture Building in Washington. The average citizen can live a safer, more carefree life because a staff of chemists and a hundred inspectors in the field are on the alert, anticipating dangers and testing their suspicions scientifically.

Parents probably still worry when the children troop to the corner store to spend pennies for candy. They long for the simpler days when all sweets were home-made and fresh from the kitchen.

The Food and Drug Administration has been able to get a law passed to stop manufacturers from imbedding small inedible prize toys in candy, because of the danger that a child may injure his teeth by biting down suddenly. Such toys, too, have been swallowed or even lodged in the windpipe. Manufacturers either leave out the trinkets, or circumvent the law by placing the prize in a special compartment of the package.

Of course, there is always the possibility of violations. The control exercised here differs from the supervision over alcoholic beverages; candy manufacturers are not licensed, and it is their responsibility to deliver safe, wholesome sweets to the consumer, who is usually a child. They know that their plants and shipments are subject to inspection; and although theirs is a highly competitive business and the temptation is there to coax the young customer back repeatedly for the same brand, manufacturers engaging in interstate commerce usually comply with the law. Goods made and sold within the confines of a single state are subject only to local regulations.

Candy makers often take pains to inquire first if new products will comply with the provisions of the Food and Drug Act. A revival of an old favorite, which was an odd creation, was recently sent in with a query before being launched in the market. It consisted of a large dome of rocklike crystallized candy, with a glass peep-hole revealing a colored cardboard scene resplendent with flowers, children and pets. This alluring confection was examined by the Food and Drug Administration to check the possibility of the small consumer's loosening and swallowing the glass window.

The usual sucker on a stick might not be considered the safest treat, and if cases of injuries were reported some action might be taken, the administration indicated. Certain companies have tried to substitute a cord, but children seem to like "the candy with the stick attached."

Cordial-filled candies are controlled by the provision in the law which prohibits an alcoholic content higher than one half of 1 per cent. This permits the usual harmless flavorings. Parents may object to the use of rum or similar flavorings, but this is not touched by the act.

Protection as to coloring matter is afforded by the close supervision of firms using coal tar dyes. Only harmless dyes are used, and these are certificated.

Recently an energetic campaign has been waged against filth of all kinds in foods. Not only may no harmful ingredients be used, but the conditions of manufacture must be beyond reproach; surroundings must be clean, flies screened out and the candy protected from dust. Through frequent inspection of the factories, authorities keep in touch with general conditions. A suspected shipment may be sampled in the shipping department or after it is in possession of the transportation agency.

The inspector may simply ask that the shipment be held until a thorough investigation has been made. Full cooperation is usually offered. If not, an embargo is placed on the goods by state or local authorities. Field offices and Washington authorities are notified of these steps, pending laboratory study. Chemists and technicians analyze the consignment. Occasionally a mouse hair or a fly's leg or other undesirable material is found.

Washington officials review all the evidence, and in the event that the sample is pronounced filthy, the information goes to the solicitor's office, who in turn notifies the appropriate U. S. marshal in the area involved. He is an agent of the Department of Justice, and it is his duty to seize the goods in the name of the United States. A proceeding called "Action Against the Goods" follows. The case may be tried in court before a jury; and if the decision stands, the goods may be destroyed.

In the event of an economic violation, where for instance short weight is the charge, repackaging under supervision, with the cost borne by the offender, is the usual procedure that is followed.

Some foods seem to be particularly susceptible to "filth," as interpreted by experts. Nuts that have been packaged too long under certain conditions of temperature often hatch out worms. Toasting nuts before using them in candy helps to prevent this; but it is the usual thing to use uncooked nuts in candy. Candy to which peanuts have been added need careful watching.

Packaging, too, is watched, both to insure honest quantities and to guarantee that no harmful substance touches the edible material. Thus, in the interest of safety, the wrapping of tea in lead foil has been discontinued. At one time, cacao beans, the source of cocoa and chocolate, came into port in mesh bags which had lead tags attached with wire. Officials found a few tags ground up with the beans and put a stop to this practice. A watch is also kept on maple sugar and sirup to keep out the same harmful metal, which might come from contamination of the pails in which the sap is collected.

# GRINDSTONES

**CAREY P. McCORD** *tells a tale of the natural grindstone industry, and its attendant occupational disease — silicosis*

AT THE TIP of the thumbnail of Michigan's mitten contour lies Grindstone City. Near 1835, into the town's small harbor sailed a sloop with Capt. A. C. Peer in command. Captain Peer was looking for a cargo, and Grindstone City had just opened up a stone quarry. Captain Peer found no immediate cargo, but he founded an industry. He sensed that the rock of Grindstone possessed those unusual qualities required in the grinding of edged tools and cutlery. In 1838 Captain Peer built his first mill—a mill destined to furnish stones to Russia, China, Germany and Japan—to furnish stones for industry everywhere, for farmers, for lumbermen, for housewives. A factor in the development of the entire Midwest, this Michigan pioneer industry had no provincial limitations. Its output reached the ports of the whole world.

Grindstone City is now but a monument to its former self. Its lake shores are lined with hundreds of culled stone discs, large and small, smooth and rough. Some of its few remaining walkways are paved with discarded grindstones and uncut slabs. Flower beds are edged with "kitchen stones" or waste stone cores. Outdoor tables are made of huge stone discs and the tops supported on stone legs. At the entrance to the now tiny village stands a large grindstone marker with the inscription, "In Memoriam of the Grindstone City Pioneers, 1835-1938."

Wandering about the old quarries and mill sites are two ghosts. One is the ghost of the bygone industry itself—proud of its contributions to the world's growth and betterment, humble in its recognition of the superiority of those materials that supplanted it. The second ghost is furtive, little recognized, scarcely named, never praised—the ghost of a disease produced by mill work among stone workers.

### *One Hundred Years of Grindstone Making*

Sandstone is abundant throughout the world, but few deposits possess the peculiar texture necessary for the grinding of edged tools and cutlery. Coarse buhr and ganister stones may be used in grinding paint, corn and wheat, but for a natural stone to be satisfactory for cutting edge production, the stone must represent fine, hard granules of silica, strongly bonded with silicates, carbonates and other minerals, particularly free from "hardheads" —imbedded pebbles, immediately destructive to sharp edges.

Such a stone was discovered before 1835 on the shores of Lake Huron but was limited to a few hundred acres. Enough stone was found there to provide continuous operations for nearly 100 years without exhausting the supply. Cooperating with Captain Peer were

Messrs. Pease and Smith, who operated the first quarry. In later years, many other names appeared, including J. B. Johnson (1860), William H. Cooper (1865), Worthington and Sons (1871), the Lake Huron Stone Company, operated by the Wallace family and then in 1888 the Cleveland Stone Company. Regardless of owners or operators, the stone remained the same. Through "trenching," "drilling," "reaming," "blasting" and "wedging," stone blocks were procured and hauled to the mills. There the big rock was "eyed," "chipped," "scabbled" and "dressed" into industrial grindstones; small rock was shaped into scythe stones, sickle stones, whetstones and grindstones for the farmers and lumbermen—in endless profusion. In early days, all work was done by hand. In time came gang saws, powered chisels, rim cutters. The earlier square, hand-cut eye was replaced by circular eyes, cut by coring machines. It was essentially a seasonal trade, limited to warmer months; but some work was carried on throughout the year.

In a good year, as much as 25,000 tons of stones were shipped by sail boat, steamer or rail. Some of these stones were 72 inches in diameter and 14 inches in thickness. The best grade of stones commanded a price of from $15 to $18 per ton, and single stones at times weighed as much as 3 tons.

In the mills and in the quarries, 150 workers were employed; but in the course of nearly 100 years of activity, the aggregate of workers represented a few thousand. Here in these quarries and mills, workers gained their livelihood, some aged and died, some died prematurely; but all contributed to the development and progress of this country's Midwest section particularly, and in some measure to the industries of the world.

For many years Grindstone City thrived. "Then," to quote one of the surviving operators, Mr. Lee Wallace, "about 1900 there came a rumor that an artificial abrasive had been discovered. At that time we didn't think it would amount to much." But they were soon forced to think otherwise.

### *The Coming of Havoc*

In the midst of the years of prosperity, the destroyer of the natural abrasive stone as a

Some of the natural grindstones were 72 inches in diameter and as much as 14 inches in thickness.

major agent in industry was born. Just as the germ of the ultimate destructive agent of the human body may long and quietly reside within an organ or tissue, awaiting the pathologic "Der Tag," so also that substance destined to reduce the natural grindstone industry to comparative obsolescence existed long before the years of its triumph.

The year is 1891, the place Monongahela, Pa. There in a make-shift laboratory, a then unknown chemist endeavored to make artificial diamonds from clay and coke in an electric furnace, improvised from a plumber's solder pot. No diamonds appeared in the pot, but something perhaps even more valuable—a few highly colored, iridescent crystals. A successful failure, these synthesized crystals proved to be harder than any known substance and usable in cutting any precious stone, including diamonds. Believing the substance to represent a mixture of carbon and corundum, its discoverer Edward G. Acheson created the term "carborundum." So small was the early yield that carborundum was protected as though itself a precious stone. On a petty scale it was peddled to lapidaries and jewelers, with the carat as the unit of sale and at a price equivalent to $880 per pound. Then came patents, corporations, fame and fortunes. Recent years have seen the yearly production of 30,000 tons of carborundum, obtainable at 15 cents per pound.

Out of that pot came today's fabrication industry as best exemplified by automobile manufacture. In this one industry more than 200 operations include high speed grinding as essential steps. Romance in a plumber's pot. It may be improper to label this pot as the mother of mass production, but it would be foolish to deny it a place near to parenthood.

Not solely to carborundum may be attributed the industrial revolution built around synthetic abrasives. Emery is a nonidentical twin. Carborundum never has been found as a natural mineral. Emery is widely distributed over the earth. Pliny, the Roman, knew of the abrasive action of emery, which he designated "naxium." When the Bible refers to "adamant," emery possibly is the substance described. In 1830, a railroad was under construction from Boston to the Hudson River. In a cut near Chester, Mass., emery was found in some abundance. Natural emery is aluminum and iron oxides, together with impurities. The Chester discovery was believed to represent iron, as emery was then little known. Blast furnaces were created to smelt iron. Dismal failure was the lot of the promoters, since emery does not lend itself to any such enterprise. A little later these deposits were worked as a source of a natural abrasive but soon lost their importance, for in 1899 Charles B. Jacobs produced synthetic emery from bauxite.

The mere existence of carborundum and emery is not sufficient for industrial requirements. Wheels were needed. These abrasives in granular form may be bonded in a score of fashions, each meeting some special demand.

Carborundum, the synthetic abrasive that displaced the old grindstone industry, sold for $880 a pound when first found.

These abrasive twins in their many modifications, shapes, sizes, granular sizes, comply with the great majority of industry's needs calling for high speed mineral abrading.

Boon that these twins were and are in industy, they proved villainous to Grindstone City and to all grindstone cities.

It is fairly easy to fix the moment of death of an observed person; difficult to fix the death of an industry. When did the whaling industry of New England die? When died the buggy industry? When died natural grindstone manufacture? Quite bravely, but a little wistfully, its operators point to a few evidences of virility, the dependence of some few industries on natural stones and the continued operation of several abrasive stone quarries. Just as carborundum and artificial emery ended the widespread use of natural stones of grinding, so the coming of concrete largely terminated the profitable operation of sandstone quarries for building stone purposes. Carborundum, emery and cement have turned rock quarries into fish ponds. The small farmer is the residual stronghold of the natural grindstone, but unlike soap a single unit may last for generations. A pat simile is, "As lasting as a farmer's grindstone."

Acheson, poking around in his plumber's crucible in 1891, mortally wounded Grindstone City. On Sept. 29, 1929, Grindstone City gave up the struggle.

### *Grindstone's Second Product*

Gone are the quarries' activities, tripods and drills; gone are the powder cans; gone are the trams; gone are the gang saws; gone are the cranes; gone are the docks; gone are the sailing vessels and steamers; gone is the railroad; gone are Grindstone's workers. When inquiry is made as to the whereabouts of the quarry and mill workers, a few remaining elders of the village reply, "Most of the mill hands died of 'grit consumption.'" Some use other terms, "dust on the lungs," "rock tuberculosis" or "grinders' consumption." Some say, "A lot of the mill hands died of some disease that the doctors said came from the dust." Here then is Grindstone City's second product—silicosis. Long before the term silicosis was utilized in 1870 by Visconti, these quarries were turning out silica grindstones by the thousands. The all-embracing term for dusty lung diseases, "pneumonoconioses" was not devised by Zenker until that year. The x-ray, indispensable in the diagnosis of silicosis during life was not discovered until 1895 by Roentgen in Germany. Not until many years afterward did the services of the x-ray technician extend to such places as Grindstone City. There is, then, no cause for wonder that nowhere are there available precise medical records of dusty lung diseases among Grindstone City's workers. Almost complete decadence of this pioneer industry had taken place before the word "silicosis" was on the tongues of doctors, engineers, manufacturers, trade unionists and lawyers. No less, for many centuries it has been known that mineral dusts produce direful diseases of the lungs among those exposed. Old medical books describe such diseases as "potter's rot," "stone cutters' phthisis," "miner's asthma," "fatal dust," but not until the practical disappearance of the industry in Grindstone City was it known beyond peradventure that silica and silica alone is the producer of silicosis and the common cause of all those diseases to which the quaint and picturesque names mentioned have been applied. No ancient vital statistics for the state of Michigan reveal any high incidence of silicosis or tuberculosis in the Grindstone City area. Gone are the physicians who treated these ailing workers.

Not even the most critical may condemn these pioneer manufacturers for any negligence in the safeguarding of these workers. If there was no medical lore for the guidance of physicians, how much less was it any lack of awareness on the part of the manufacturers. To their credit it may be pointed out that in the quarries all drilling was by wet methods, thus preventing much dust formation. It is probable that wet drilling represented a desirable trade practice rather than any foresight in worker protection. No less, it is not known that any silicosis arose among quarriers. It is to the credit of these manufacturers that attempts were made to remove dust produced in the mills. Unconscious protection was provided through the performance of stone dressing in open sheds. Limiting of most mill operations to six months of the year was another unplanned, but none the less life saving, feature of the work.

No unequivocal statement may be made that Grindstone's mill workers were decimated by dusty lung diseases. Tradition and the observations of survivors foster this belief. One surviving operator states: "I think the dust affected some of the men."

Like the archeologist, the industrial hygienist must at times fill in many gaps in his histories of long past occurrences of occupational diseases. In the absence of precise evidence of silicosis, such as might have been obtained only through the x-ray *(Continued on page 744)*

# What Is A "Bargain" In Baby's Food?

***Quality Should Be Your First Consideration When Buying Food For Baby—So Ask For Strained Foods That Bear The Famous Name Of Heinz***

YOU NATURALLY want your baby to have the best foods money can buy. The only bargain worth-while for *him* is quality. Serve him *Heinz* Strained Foods. You know they're dependably pure—because they're backed by the same reputation that supports all the 57 Varieties. Yet they cost no more than ordinary brands!

Open a tin of Heinz Strained Foods and notice the smooth texture—the appetizing color. Heinz insists on absolutely first-choice fruits, vegetables, meats and cereals. These are cooked scientifically and vacuum-packed in enamel-lined tins to preserve in high degree tempting flavors and priceless vitamins and minerals. Your baby deserves Heinz Strained Foods! Order an assortment of the 14 delicious kinds—watch him thrive on them!

# Heinz
## Strained Foods

57 These Two Seals Mean Protection For Baby

## Heinz Brings You These Four Assurances Of Quality

1. **VITAMINS AND MINERALS** are preserved in high degree by scientifically cooking finest fruits and vegetables—vacuum-packing them in special enamel-lined tins. *Quality is controlled from seed to container.*

2. **THE MOST MODERN** cooking and packing methods have been developed by Heinz specialists in Mellon Institute of Industrial Research.

3. **FURTHER ASSURANCE** of uniform excellence is furnished by constant research work of scientists in Heinz Quality Control Department.

4. **ALL HEINZ BABY FOODS** on dealers' shelves are checked regularly by Heinz salesmen and replaced by fresh stocks after a limited time. *Quality is controlled from Heinz kitchens to consumer.*

***Your Youngster Will Enjoy Heinz 12 New Junior Foods—Scientifically Prepared To Meet The Requirements Of Babies Ready For Heartier, More Highly Nutritive Meals.***

# Heinz Junior Foods

## The Greatest Partnership in the World

THROUGHOUT THE MONTHS that precede a baby's birth, the mother's well-being is, in no small degree, dependent upon the *father*—upon his understanding and intelligent co-operation.

That's why fathers-and-mothers-to-be—at the first moment they believe a little one may be expected—should seek the doctor's guidance *together*, to learn how to share this great adventure *together*.

▶The properly informed husband can help his wife to take the doctor's valuable advice. He can encourage her to follow the balanced diet, to get the rest, exercise, sunshine, fresh air, and recreation that she needs. In thus helping to make this period the happy and healthy one it can be, the husband plays a vital part of his own in the development of a sound, vigorous baby.

At the same time, the doctor is doing his part. Regular checkups on the expectant mother's blood pressure, weight, teeth, heart, and lungs . . . blood and urine tests . . . careful measurements . . . all contribute to safer and easier arrival of the baby, and a happy return to the normal appearance and active life of the mother.

▶It is not uncommon today for many doctors to set a flat fee for maternity cases. In such instances, this means that it costs no more for prospective parents to enjoy the benefits of going to the doctor early and as frequently as necessary. And in most sizeable communities there are maternity clinics offering their services to those unable to pay.

A wealth of helpful information about the mother and baby is included in Metropolitan's free booklet, "Information for Expectant Mothers." Write today to Dept. 840-Z.

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## REFINEMENT OF FOOD

*(Continued from page 704)*

body is controlled by the synergistic action of $B_1$, $B_2$ and $B_6$. It is possible, even probable, that a similar interrelationship exists between the vitamins in human metabolism. The observations reported by physicians that better general improvement in health is obtained with vitamin rich foods than by administration of pure vitamin $B_1$, $B_2$ and nicotinic acid amide is pretty good evidence that additional factors are involved. It would seem the part of wisdom, therefore, to go to the garden, the grocery store, and the meat market for our regular supply of vitamins rather than to the drug store. The administration of pure vitamins can be left for acute cases under a physician's supervision. Nature still knows more than man about the ingredients of a complete diet.

## RESEARCH

Too much emphasis is being placed on basic research today and not enough attention is being given to its practical application, *The Journal* of the American Medical Association declares in an editorial which concludes that "proper integration of the fundamental sciences in clinical medicine and, at the same time, independent investigation in the two fields represent the primary needs of the day.

"On the physician rests the obligation to establish through clinical investigation all the possible practical results based on investigation in the laboratory as soon as possible in order to benefit the sick. The physician cannot always afford to wait until the fundamental discoveries have been established beyond the shadow of doubt in the laboratory. Indeed, this application of laboratory science to the bedside represents the highest type of clinical research and one which may inspire every practicing physician."

It is the contention of *The Journal* that practical research requires much more acumen than does that in the laboratory. "The clinical investigator," *The Journal* says, "must be a good diagnostician; a keen, impartial observer, capable of utilizing the relatively new methods of alternate cases of blindfold tests, and of enlisting the support of the pharmacologic laboratories."

# *Probably the most SIGNIFICANT milling development of recent years*

★

Bakers and millers have long been aware of the medical profession's demand for a way to make good white bread even better, nutritionally. The past decade has seen a good deal of effort directed toward bread improvements of all types . . . most of them, however, centered around addition of wheat germ to the flour or bread.

These latter attempts, while well-intended, were but partly successful in restoring Vitamin $B_1$ and other nutrients to the bread. For two reasons. First, because less than 20% of the Vitamin $B_1$ content of natural wheat (a rich source of this vitamin) is present in the germ of the wheat. Over 80% of the $B_1$ exists in other portions of the wheat berry. Second, it is not practical to make a commercial loaf of acceptable quality from flour containing the 12% to 15% of germ that would be necessary to restore to the bread the same Vitamin $B_1$ content as in 100% whole wheat bread. The high enzymatic action of wheat germ tends to liquefy the flour gluten.

Obviously, some other way of restoring Vitamin $B_1$ and other important whole wheat nutrients to bread had to be found. The simplest way, of course, would be to use synthetic vitamins and minerals for the restoration. The costs of such fortification, until recently, made this solution uneconomical. General Mills research chemists and milling technicians were therefore assigned the task of producing a flour that would have as many of wheat's natural nutrients as possible, present in the same amounts as in whole grain flour.

In spite of severe technical difficulties, this research was able to evolve an entirely unique method of flour extraction, by which the whole wheat level of the natural Vitamin $B_1$ and part of the Vitamin G, iron and calcium of wheat are retained in the flour. Additional Vitamin G concentrate and compounds of calcium and iron are added in the mill to bring the flour up to the whole wheat level in these four nutrients. It may be truthfully stated that *all of the most important known vitamins and minerals of whole wheat are present in this flour, in the same amounts as in the wheat itself.* The flour contains *no* added wheat germ.

This new flour, named "VIBIC", was announced to the baking industry on June 8—the same date as its initial announcement to the medical profession in *The Journal*. While it may be some time before VIBIC-made breads are generally available, we believe the statement is justified that this new flour is one of the most significant milling developments of recent years. It has the enthusiastic unofficial endorsement of many leading physicians and nutritional specialists, and the product and claims for it have been accepted by the Council on Foods of the American Medical Association. Cowgill[1] has repeatedly urged that "it seems reasonable to believe that through the one act of adding the vitamin to the wheat flours as a group we would increase directly the vitamin $B_1$ intake of a greater part of our population than could be affected by any other single step." And Wilder[2] has stated: "Above all other foods, flour is the food that the poor depend on mostly. If flour were fortified merely enough to restore to it the Vitamin $B_1$ content of the whole wheat, the entire bakery group of edibles would be converted overnight from products nutritionally poor in this vitamin to products rating as excellent." The *American Journal of Public Health*[3] states editorially: "White bread . . . would be even more valuable if it contained a larger quota of the Vitamin $B_1$ (thiamin) and the iron of the unrefined wheat flour."

Bread made from VIBIC Flour is not as white and bright as the bread you now buy at your grocer's or baker's, but is if anything even more distinctive or "wheaten" in flavor. To satisfy such demand as there may be for a pure-white bread containing the same nutrients as bread made with VIBIC Flour, General Mills has also developed VIBIC *Concentrate*. It is a bread ingredient, in which the Vitamin $B_1$ content is entirely pure crystalline thiamin chloride (as distinct from Vibic Flour, in which the source of the $B_1$ is the natural grain), and the added Vitamin G content is commercial riboflavin. The calcium and iron are added in the form of commercial salts of highest quality and purity. One half of one percent of VIBIC Concentrate added to flour can produce a snow-white bread identical in Vitamin $B_1$, G, calcium and iron content to bread made with VIBIC Flour, or to good 100% whole wheat bread. However, the cost of VIBIC Concentrate is necessarily somewhat higher per pound of bread, due to the synthetic nutrients used.

It is hoped that these breads will prove sufficiently popular with the public to justify their widespread adoption by bakers.

[1]G. R. Cowgill, Ph.D. Reprinted by courtesy of Journal of the AMERICAN MEDICAL ASSOCIATION, Vol. 113, No. 24, Page 2150 (December 9, 1939).

[2]Russell M. Wilder, M.D., Mayo Clinic, at public health lecture June 29th, 1939. Reprinted by courtesy of NORTHWESTERN MILLER, Vol. 16, No. 7, Page 52 (July 5, 1939).

[3]An editorial. Reprinted by courtesy of AMERICAL JOURNAL OF PUBLIC HEALTH, 29, No. 7 (July, 1939).

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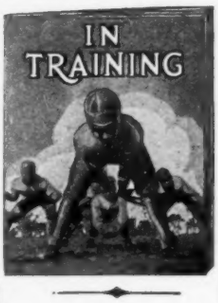

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AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street Chicago


# We Call it Allergy

(**Continued from page 702**)

increasing them progressively; or the patient may have to eliminate the offending substance from his environment or diet.

Allergy specialists say that it is now possible to desensitize patients with practically all the allergens that are inhaled—pollens, dust, danders and so on—with the exception of chemicals. "Contact allergens" such as poison oak or ivy also respond to injections of extract. Some food allergies also can be desensitized, although the results are by no means so satisfactory as in the case of inhaled or contact allergens.

For many a victim of food allergy, complete relief may mean strict avoidance of the known allergen. Often this is a difficult or an impossible feat. There have been cases where a person allergic to fish showed violent symptoms even when, apparently, he had eaten no fish. Investigation showed that his food had been prepared in a utensil in which fish had been cooked previously. Another patient who was allergic to pork experienced a recurrence of his eczema while he was on a strict porkless diet. He had ingested a microscopic amount of his allergen in ice cream, the gelatin in which had been made from animal scraps, including pork.

For the majority of allergic persons doctors hold out every promise of relief. Says one authority:

"Eight or nine out of every ten persons with seasonal pollinosis, properly treated, will obtain a satisfactory measure of relief. This does not mean that they will never sneeze or wheeze again. By satisfactory relief, we mean that, assuming a pollen period of six weeks of symptoms when untreated, the total period in which symptoms occur will be reduced to about six days."

To any hay fever sufferer the ordeal of only six days instead of six weeks will sound like a blessing undisguised.

The same allergist says that seven out of every ten cases of hay fever or asthma that persist throughout the year can be given "altogether satisfactory relief." And between 75 and 80 per cent of the food or inhalant allergies that produce hives and eczema can be wholly or partially relieved.

Probably the vast majority of allergy victims today, doctors say, are suffering unnecessarily. Relief is not only possible, but it is also available on every hand. In recent years allergy specialists have increased in number, and general practitioners have made a special study of the methods of testing and treating. Every large hospital now maintains an allergy clinic where the services of experts are available. For the benefit of hay fever victims alone, the U. S. Department of Agriculture has made a study of the pollens in all parts of the country.

If this means much to the allergic adult, it means even more to his children. Dealing with allergies is now a part of preventive medicine. The allergic tendency, remember, is more often than not passed on from parent to child. This is something to be thankful for, rather than to be feared. The allergic parent is forewarned that his child is likely to be more susceptible to certain diseases. With the doctors' vigilance and aid, possibly serious and lasting ailments can be corrected.

"The lay person should be told that the time to treat an allergic condition is when it is discovered, not when it becomes serious," an outstanding allergist told the Society for the Study of Asthma and Allied Conditions. "I know of no disease where an ounce of prevention is of more value than in allergy."

Possibly more far reaching methods of treatment may be available in the near future. Some doctors who believe that histamine is the immediate cause of the allergic symptoms feel that science is on the brink of an important discovery. The American Chemical Society was informed this year of a combination of vitamin C and calcium which is said to have the effect of "neutralizing histamine and blocking its further action." This treatment is still in the experimental stage, and its safety and effectiveness are still to be established. Yet this, or something like it, may mean the final conquest of allergic disease.

# Self-Rising Flours and Mixes

NOW come special flours and mixes ready prepared in so convenient a form that the old method of mixing up batter and dough is fast becoming extinct. For the amateur cook and the bride of the man whose zest for baked goods is founded on memory of the biscuits and pastry that mother used to make, these products may be "face-saving," as well as time-saving.

Self-rising flours, pancake flours, biscuit mixes and gingerbread mixes are compounded of wholesome ingredients. They differ from ordinary flour in that they contain a leavening ingredient, usually baking soda and an acid salt. The mixes also contain shortening, sweetening, a binding ingredient, dried milk or dried egg and flavoring. The following ingredients are accepted by the Council on Foods.

### *Self-Rising Flour*

White flour
Baking soda
An acid producing salt, calcium acid phosphate, sodium aluminum sulfate, potassium tartrate or sodium pyrophosphate
Salt

### *Biscuit Mix*

White flour
Hydrogenated vegetable fat
Sucrose
Dried skimmed milk
Baking soda
Acid producing salts, sodium pyrophosphate and calcium acid phosphate
Salt

### *Pancake Flour*

White flour plus two or more of the following flours: corn, soybean, buckwheat, rye, rice
Baking soda
An acid producing salt, calcium acid phosphate, sodium aluminum sulfate, potassium tartrate or sodium pyrophosphate
Salt
Dextrose (corn sugar)
Dried skimmed milk

### *Gingerbread Mix*

White flour
Sucrose (ordinary sugar)
Hydrogenated vegetable fat
Dried molasses
Dried eggs
Ginger spice
Baking soda
Acid producing salts, calcium acid phosphate and sodium pyrophosphate
Dried skimmed milk
Salt

*Fred G. Korth.*

QUICK ORANGE ROLLS:—Sift 2 cups of self-rising flour with 2 tablespoons of sugar. Cut in ¼ cup of shortening. Beat 1 egg and add with ½ cup of milk or orange juice. Blend with a fork. Knead gently on a floured board for about 30 seconds. Roll out in sheet, ¼ inch thick. Brush with melted butter. Sprinkle with orange sugar (½ cup of sugar mixed with grated rind of ½ orange) and roll in jelly-roll fashion. Cut into 1 inch slices and bake with cut side down in moderately hot oven (425 F.) 15 minutes.

In the manufacture of each product, definite proportions of the dry ingredients are mixed thoroughly in a batch mixer and automatically packed in cartons until they are ready for consumption.

When self-rising flours are used in the preparations of biscuits, muffins and pastry, no additional leavening ingredient, such as baking powder, is required; but liquid, shortening and sweetening, if desired, should be added. The pancake flours, biscuit mixes and gingerbread mixes require only the addition of liquid, either water or milk, according to directions printed on each package; for this reason they are exceedingly useful products to take on a pack-trip into the North woods or Rocky Mountains.

The occasional use of hot biscuits and muffins and other forms of small bread is a welcome addition to any meal, and if these products are well baked in the center with a good crust on all sides they are as easily digested as well-baked bread. Nutrition authorities suggest that syrup, jam, jellies and other sweet

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compiled by Esther Bogen Tietz, M.D. 10 cents.

**Why Think About Eating?**
by H. J. Gerstenberger. A birds-eye view of the diet question. 8 pages. 10 cents.

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spreads should be used sparingly with these products, so as not to sate the appetite for the other foods that are served with the meal.

In planning meals for your family it is well to remember that biscuits, muffins, griddle cakes, gingerbread and other foods made from these products are rich in calories and poor in vitamins. The foods which are richest in vitamins and minerals and so should be included to offset the deficiencies of these products are milk, eggs, fruits and vegetables, especially the green leafy vegetables. In other words, a biscuit calls for a bowl of salad; a griddle cake calls for an orange; a muffin needs an egg, and a serving of gingerbread, a glass of milk. Older persons who are trying to keep down their weight should rigorously limit the quantity of hot biscuits, muffins, griddle cakes and pastry in their daily diet.

The composition of brands of self-rising flours and mixes accepted by the Council on Foods of the American Medical Association is given in the following table.

| Product | Moisture per cent | Ash per cent | Fat per cent | Protein per cent | Carbohydrates per cent |
|---|---|---|---|---|---|
| Ordinary white flour..... | 10.4 - 14.5 | 0.3 - 0.4 | 0.8 - 1.5 | 6.5 - 9.8 | 73.4 - 80.3 |
| Self-rising flours..... | 11 - 14.5 | 3.6 - 5.7 | 0.8 - 1.6 | 8.2 -12 | 67.8 - 78 |
| Pancake flours..... | 8.8 - 12.9 | 4.1 - 6.4 | 1 - 2.7 | 8.6 -12.3 | 66.4 - 74.7 |
| Biscuit mixes..... | 8.5 - 10.7 | 2.8 - 6.7 | 9.1 -15 | 7.5 -11 | 58.8 - 65.6 |
| Gingerbread mix..... | 4.5 | 2.5 | 27.4 | 5 | 60.4 |

## ACCEPTED SELF-RISING FLOURS AND MIXES

The following brands of self-rising flours and mixes have been accepted by the Council on Foods of the American Medical Association and are described in the book "Accepted Foods and Their Nutritional Significance" published by the American Medical Association.

### Biscuit Mix

Airy Fairy Kwik-Bis-Kit Biscuit Mix
Bisquick Biscuit Mix
Bisquick with Whole Wheat Biscuit Mix
Ezemade Biscuit Mix
Fisher's Biscuit Mix
Kismet Biscuit Mix
Light's Oven-Perfect Biscuit Mix
Ready for Use Biscuit Mix

### Gingerbread Mix

Dromedary Gingerbread Mix

### Pancake Flours

Aunt Jemima Buckwheat, Corn and Wheat Pancake Flour
Aunt Jemima Pancake Flour
Fisher's Pancake Flour
Golden Dawn Pancake Flour
Griddle King Pancake Flour
Hecker's Cream Buckwheat and Wheat Flour Pancake Flour
Hecker's Grandma's Pancake Flour
Hecker's Old Homestead Pancake Flour
Kreemex Buckwheat and Wheat Pancake Flour
Kreemex Pancake Flour
Our Family Buckwheat Pancake Flour
Our Family Pancake Flour
Sweet Tooth Buckwheat Pancake Flour
Sweet Tooth Pancake Flour
Sunrise Pancake Flour
Sunrise Pancake Flour with Whole Wheat

### Self-Rising Flours

Arbitrator Self-Rising Flour
Betty Jane Self-Rising Flour
Blair's Self-Rising Flour
Blair's White Fox Self-Rising Flour
Bob White Self-Rising Flour
Cellu One-Three-Three Self-Rising Flour
Charmer Self-Rising Flour
Cream Self-Rising Flour
Fairy Queen Self-Rising Flour
Fant's Birthday Self-Rising Flour
Glister's Self-Rising Flour
Glister's Featherlike Self-Rising Flour
Glister's Mother's Joy Self-Rising Flour
Gold Medal "Kitchen Tested" Self-Rising Flour
Happy Jack Self-Rising Flour
Just Right Self-Rising Flour
Light's Oven-Perfect Self-Rising Flour
Marechal Neil Self-Rising Flour
Mary Lou Self-Rising Flour
Quix-A-Winx Self-Rising Flour
Ready to Bake Self-Rising Flour
Robin's Self-Rising Flour
Saxony Self-Rising Flour
Sweet Pea Self-Rising Flour
Washington Self-Rising Flour
X-Cellence Self-Rising Flour

## DEADLY DISEASE NUMBER 7

(Continued from page 698)

that vigorous methods of resuscitation are required at birth. The use of such drugs should be confined to reasonable amounts in the early stages of labor.

*Infections*

Certain infections, such as those of the navel as well as infections of the skin, may also cause deaths early in infancy. Proper care of the newborn infant may help obviate such deaths. The umbilical cord dressing should be surgically clean, and 95 per cent alcohol on the cord dressing is recommended. Treatment of the cord by surgically clean technic has been one of the great contributing factors in reducing infant mortality.

With decreasing birth rates in many parts of the United States, efforts must be made to salvage infant lives in every possible way. The diseases peculiar to infancy offer a field where preventive measures may secure notable results.

## THE STOP-HEMORRHAGE VITAMIN

(Continued from page 691)

the new vitamin preparation, the risk of hemorrhage is diminished. But, if you suffer from such conditions, see your physician for advice.

Until now the richest natural sources of vitamin K were alfalfa and spinach. Nature, however, has provided this—as well as other vitamins—in small amounts, and the difficulty of its extraction has made it expensive. As the result of extensive laboratory research, a synthetic product, inexpensive and easily prepared, has been perfected, but it is not yet available, except for experimental purposes.

But one fact should be remembered! If you should get a sudden nosebleed while powdering your nose or if you should slash yourself while shaving, don't expect to check the bleeding by gulping down a capsule of vitamin K. Because it just won't work. Try to keep in mind the special function of vitamin K—as modern medicine would have you do—and you won't look for miracles.


# Here's a deliciously different NEW FORM OF BRAN

## Check its Advantages

- helps relieve constipation caused by too little bulk
- furnishes significant amounts of Phosphorus and Iron and is a rich source of Vitamin $B_1$
- double-milled—made by an improved process
- 100% Whole Bran
- accepted by the Council on Foods of the American Medical Association

ACCEPTED AMERICAN MEDICAL ASS'N Council on Foods

## New DOUBLE-MILLING process refines texture of NATIONAL BISCUIT 100% BRAN

YOU may feel that bran can be helpful in relieving constipation which is due to lack of sufficient dietary bulk—yet you may have hesitated to eat it because it didn't please your taste—or because you considered it "harsh."

Now you will be glad to learn that the new National Biscuit 100% Bran, made by an *improved process* of Double-Milling, is delightfully different in both flavor and texture.

This *modern* Bran is the result of over two years' testing. The new process of Double-Milling to which it is subjected, further breaks down the bran fiber making it less likely to be irritating. National Biscuit 100% Bran is highly absorbent. It frequently assists in forming a large, soft mass in the intestines and aids elimination.

Eat National Biscuit 100% Bran regularly, as a cereal and in delicious bran muffins (there's a wonderful recipe on the package!) If your constipation is not helped in this simple manner, consult a competent physician.

PRODUCT OF NATIONAL BISCUIT COMPANY

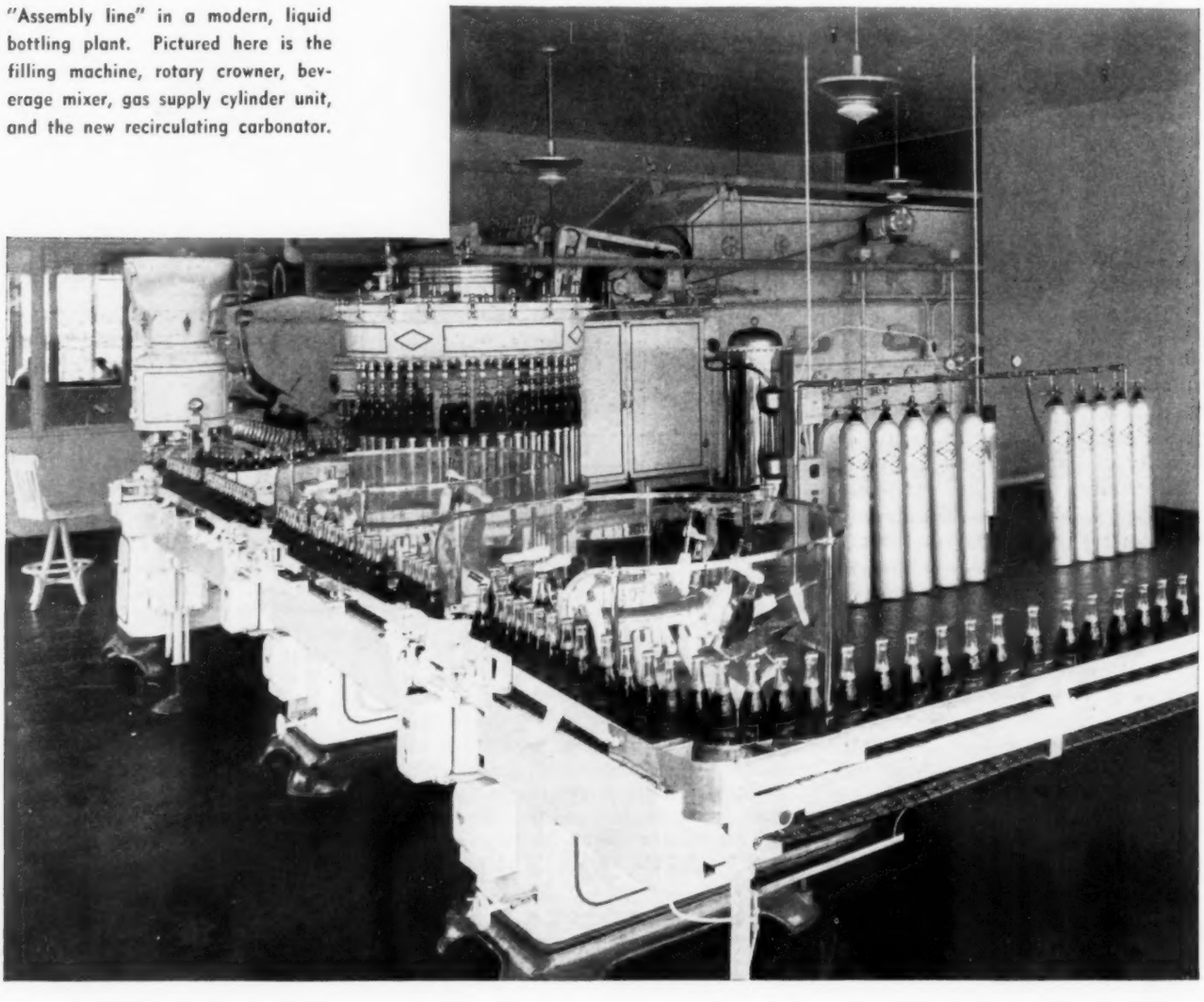
# SOFT DRINKS for SUMMER

***Over 150 years ago, Priestley first discovered the solubility of carbon dioxide in water. Today, the yearly consumption of carbonated beverages has soared amazingly to 12 gallons per capita, and is still rising.*** **By HARRIET MORGAN FYLER**

"POP" is a name used to designate numerous varieties of carbonated, sweetened and flavored bottled beverages of the soft drink variety. To oldsters and youngsters alike, pop affords a refreshing moment in an exhausting day.

The use of beverages containing an abundance of carbon dioxide, both those resulting from the fermentation of fruits and grains and those mineral waters charged with carbon dioxide in the internal reservoirs of the earth, goes back to the remotest time. The principle of these naturally occurring carbonated beverages was not known until 1772, when Priestley determined the solubility of carbon dioxide and employed it for charging beverages. Priestley's experiments interested Physick, a Philadelphia physician. In 1807 Physick induced his druggist to prepare carbonated water for his patients, using fruit juice as a flavoring. Since that date the manufacture of carbonated beverages has grown into a tremendous industry. In 1939 there were over 6,000 bottling plants in the United States engaged in preparing approximately 13 billion half pints of carbonated beverages a year.

The chief constituent of all carbonated beverages is water. From 89 to 93 per cent of a bottle of pop is water. The water most commonly used is carbonated. This is done by instilling carbon dioxide



"Assembly line" in a modern, liquid bottling plant. Pictured here is the filling machine, rotary crowner, beverage mixer, gas supply cylinder unit, and the new recirculating carbonator.

**It's really a treat** for a baby's relatives to hear his mother say, "Dear—dear! I just can't get him to eat his vegetables!"

At this signal, they're off, each with a screamingly good trick, guaranteed to charm a baby into eating. Usual upshot: a tantrum.

And it's so unnecessary—*you don't need tricks if he likes the taste!* Try him on the flavors and textures that have made a hit with so many babies—try him on Clapp's! Watch him eat when he gets food that he likes!

# Dodge those family pow-wows . . .

# BABIES TAKE TO CLAPP'S!

**Get your baby's advisory council** to make a taste test—they'll soon find out why babies like Clapp's so well. Vegetables are more pleasant to *anybody's* taste when they're canned at the peak of freshness and lightly salted according to doctors' directions.

And with Clapp's rich flavor goes a growth-producing supply of vitamins and minerals, too.

**Yes, and it's the feel** as well as the taste! Clapp's Strained Foods feel smooth—though not liquid. Clapp's Chopped Foods are uniformly cut.

For 19 years, Clapp's have been getting tips from doctors and mothers . . . you learn a lot in 19 years! Clapp's were first to make both Strained and Chopped Foods commercially, and they make nothing *but* baby foods.

**17 Strained Foods for Babies**

**Soups**—Vegetable Soup • Beef Broth • Liver Soup • Unstrained Baby Soup • Vegetables with Beef • **Vegetables**—Asparagus • Spinach • Peas • Beets • Carrots • Green Beans Mixed Greens • **Fruits**—Apricots • Prunes Applesauce • Pears-and-Peaches • **Cereal**—Baby Cereal.

**12 Chopped Foods for Toddlers**

**Soup**—Vegetable Soup • **Combination Dinners**—Vegetables with Beef • Vegetables with Lamb • Vegetables with Liver • **Vegetables**—Carrots • Spinach • Beets • Green Beans • Mixed Greens • **Fruits**—Applesauce Prunes • **Dessert**—Pineapple Rice Dessert with Raisins.

# Clapp's Baby Foods

**OKAYED BY DOCTORS AND BABIES**

gas under pressure into pure water. This gas causes the effervescing bubbles in a soft drink. The carbon dioxide in carbonated water is completely harmless. Although carbon dioxide is a waste product of breathing, it is also a useful constituent of the blood, and if its concentration in the blood falls below a certain level because of over-rapid and overdeep breathing, spasmodic cramping of muscles is produced. The amount of carbonic acid in carbonated beverages is extremely small, when compared to the carbonic acid combined as carbonates contained in foods, or when compared to the enormous amount of carbonic acid formed in the course of the oxidation of most foods in the body.

Soft drinks are valuable in meeting the body's need for water. Most persons drink far too little water. Water is the second most important substance taken into the body, the first being air. While man can live for about forty days without food, he can abstain from water only about four days. Water is absolutely necessary to the human body; it enters into every chemical reaction that takes place in the human body; it helps regulate and maintain body temperature and functions. Water is constantly being eliminated by the skin, lungs and kidneys; hence this loss must be replaced by some means. This is most conveniently done by drinking pure water.

The daily water requirements for health cannot be defined with any degree of exactness, as activity, temperature and other conditions influence the demands. Sufficient water should be taken with meals and between meals to satisfy thirst.

In addition to the role of "thirst quencher," pop, if made of wholesome materials, is a source of a small amount of energy. Most soft drinks contain about 10 per cent sugar, usually in the form of dextrose. Dry ginger ale contains less than this amount of sugar and consequently is less sweet than other types of soft drinks. But consumers can count on the usual soft drink to furnish about 9 calories for each ounce or about 60 calories for the usual 6½ ounce bottle. Because of its sugar content, a soft drink does have a tendency to blunt the appetite for other foods. For this reason, it seems that the water needs of children might be better met by genuine fruit juices or milk, which in addition to water provide vitamins, mineral elements and other nutrients necessary to growing children.

Several nationally distributed brands of pop contain small amounts of caffeine, which has a stimulating effect on the body. The amount of caffeine in one of the most widely distributed brands is reported to be 0.6 grains for each 6½ ounce bottle. This is about one third of the amount of caffeine obtained from a cup of coffee, as commonly prepared. An 8 ounce glass of chocolate flavored beverage containing milk also contains 0.6 grains of caffeine and theobromine.

Whether the constant use of beverages containing caffeine is harmful or harmless is still a debated question. Perhaps the majority of persons believe that normal adults may indulge in moderate amounts without injury or possibly even with benefit to themselves. There is a fairly unanimous agreement that neurotic or nervous individuals should have only moderate amounts of such beverages.

The question of whether or not children may use beverages containing caffeine and theobromine is a perennial one. The habits and customs of different families vary greatly, and the problem is complex. It is generally recognized that quantities of tea, coffee and soft drinks containing caffeine are not desirable for children. It is likewise generally recognized that a child should drink milk. Because a child will take only a limited amount of fluid material in a day, it is important that no beverage replaces milk in the child's diet.

To be an entirely wholesome product, a carbonated beverage must be bottled under sanitary conditions and in sterile bottles. The Association of the American Bottlers of Carbonated Beverages have adopted a code governing the bottling of beverages. Briefly, this code requires that bottles belonging to member organizations be washed in a 2½ per cent caustic solution at a minimum temperature of 120 F. for a period of not less than 5 minutes. Tests for sterility of washed bottles are made frequently in reliable manufacturing plants.

The use of chemical preservatives in bottled beverages has largely been abandoned. Preservatives are not needed when cleanliness and sterilization by heat are properly employed.

Nationally distributed brands of pop are subject to federal regulations. Beverages that are bottled and sold in the confines of a single state do not come under federal supervision. Federal regulations which describe the contents of a soft drink are known as standards of identity. Types of pop that are nationally distributed must conform to the standards of identity listed under the old Food and Drugs Act as well as those that will be promulgated from time to time by the U. S. Department of Agriculture, or else they must list all of their ingredients on their labels. Standards of identity have been established for ginger ale, sarsaparilla, root beer, birch beer and cream soda water.

Federal regulations also require that the presence of caffeine be stated on labels of bottled drinks shipped in interstate commerce.

Under the new Food, Drug and Cosmetic Act, no coal-tar dye may be used in a food or beverage sold in interstate commerce, unless it is certified by the U. S. Department of Agriculture. There are no federal laws requiring content data to be told in advertisements of soft drinks, but the Federal Trade Commission under the provisions of the Wheeler-Lea Act can issue cease and desist orders against firms advertising their beverages in a false or misleading way.

Whether or not a list of the ingredients of pop manufactured and sold in the same state finds its way to the label on a bottle depends on the state labeling laws. In one state, a beverage containing "some" juice from fresh grapes plus added fruit acid may be called a grape drink. In another, the presence of a fruit acid must be stated on the label. Since federal food and drug regulations do not always carry through to the labels on bottled drinks sold within a state, consumers should check their state laws with the Federal Food, Drug and Cosmetic law.

Nationally distributed brands of pop are wholesome products. On motor trips through strange territory where water supplies are of unknown purity, they offer a solution to the ever-present problem of the thirsty youngster who insists that no one in the party shall be happy until he has had a drink.

## LETTERS FROM READERS

(Continued from page 676)

attention to the fact that table salt is not mined, as the picture illustrating the article would lead one to believe. As you will note by our salt booklet enclosed, water is piped into the earth, where it dissolves the salt. Then this brine is pumped up to the surface and is allowed to settle. Next it is purified and evaporated in vacuum evaporators. After this it is dried and then screened.

E. B. TUSTIN, JR.
Worcester Salt Company
New York City

*» Although the hydraulic method is used in certain salt mines, other well known companies employ the blasting and drilling method. Compressed air drills and electric crushing and shoveling machines are employed in some mines to break loose and load rock salt.*

### Comic Department

To the Editor:

The Rev. Alfred Gilberg struck a vital note in his letter in the June issue of HYGEIA. I agree with him. HYGEIA should establish a comic department. This department should be dedicated to evolutionists and narrow-minded fanatical egotists, who think they alone have been appointed as custodians of all truth!

I am not an evolutionist, but I am intolerant of bigotry. No one, in my opinion, has had or will ever have a monopoly on either truth or thought.

When that comic department is established, there will be a reenactment of the political campaign, as depicted by the artist who saw Taft and Roosevelt in the same ring throwing mud at each other. This new scene would be evolutionists and anti-evolutionists in place of Taft and Roosevelt.

ANDREW TWEITO
Chandler, Minn.

### Good Feature

To the Editor:

This is the first year that I have received HYGEIA, but it will not be the last.

I especially like the way questions are answered in that section of the magazine devoted to individual problems.

JAMES G. MCDOWELL JR.
Dallastown, Pa.


# FAMOUS WORDS OF ADVICE—

1. "It's an ill wind that blows nobody good."

2. "Half a loaf is better than none!"

3. "'Tis better to give than to receive!"

4. "DRINK POSTUM, INSTEAD!"

**YOU MIGHT** set up a howl if your doctor said, "Absolutely *no* coffee."

But when he adds these words, "Drink Postum, instead," everything is rosy.

For Postum is a wonderfully delicious drink in its own right—its tempting aroma and satisfying goodness have made it the favorite mealtime drink in millions of American homes. And Postum is equally delicious *iced* or *hot*.

Postum, as you probably know, contains no *caffein* or stimulants of any kind. It is made entirely of whole wheat and bran, roasted and slightly sweetened.

**Quickly prepared—**
**Economical, too!**

Postum is delicious and easy to make—costs only about ½¢ a cup. Postum is a product of General Foods.

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ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

**ASK YOUR DOCTOR ABOUT POSTUM**

Lamb chops in frills, a salad bowl of crisp, raw vegetables and a fragrant rose to lend charm, are perfect for any summer's night.

# MEAT for the MALES

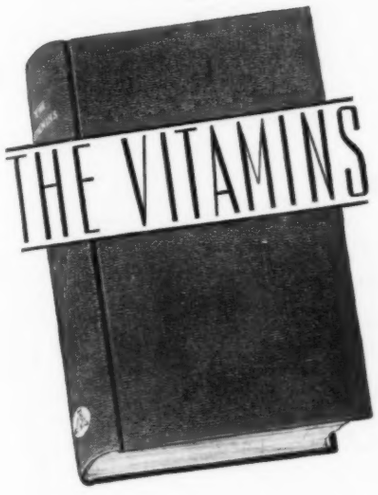
***Appetites flag and the zest for life ebbs as the mercury rises. But the men in your family demand meats; so try a few changes to help you bear up as the heat bears down***

As the mercury soars and fans whir, the P.C.A. (perspiring culinary authority) wonders despairingly, "What shall I feed them next?" No one wants those steaming hot dishes, rich with sizzling butter and savory sauces; but, conversely, a few days of cold meals—crisp salads, cool drinks, sandwiches and the ubiquitous potato chips may bring forth a teen-ager's frank and not too complimentary reference to "delicatessen dinners out of the refrigerator." Even a prompt rebuke from the arm chair doesn't clear the sultry atmosphere. Families do have to eat; appetites, especially masculine ones, must be appeased with something "solid," even in torrid days. But Oh! That modern torture chamber—the kitchen at 6 p. m.; every gas burner, plus the oven, going at full blast, and the thermometer at ninety-eight! The mere thought draws a groan.

But all is not lost. You may yet beat the heat and solve your dietary difficulties. While modification of the basic diet may be desirable in the summer, common sense dictates that radical changes are not advisable. Banish for a while those foods requiring long hours of preparation in a hot kitchen. Substitute for them dishes

# 2 OUTSTANDING BOOKS on *Human Nutrition*

## THE VITAMINS




*A 637 page symposium sponsored by the Council on Pharmacy and Chemistry and the Council on Foods. 8½x5½ inches. Red imitation leather binding. $1.50.*

Contributions from 30 noted authorities make this book a complete summary of present day knowledge and thoughts on the subject of vitamins. Material garnered from the fields of medicine, pediatrics, chemistry, biology and nutrition. Obviously not for "light reading," THE VITAMINS will prove of interest and value to dietitians, nurses, teachers of home economics and health—all scientific-minded people who take vitamins seriously.

### Partial List of Contents

**Vitamin A**
- Chemistry of, and Substances Having a Vitamin A Effect
- Methods of Assay and Sources in Food
- Requirements and Practical Recommendations for Vitamin A Intake

**Vitamin B**
- Components of the Vitamin B Complex
- Vitamin $B_1$—Methods of Assay and Food Sources
- Human Requirements for Vitamin $B_1$
- Riboflavin—Dietary Sources and Requirements
- Vitamins in Relation to the Prevention and Treatment of Pellagra

**Vitamin C**
- Pathology of Vitamin C Deficiency
- Methods of Assay and Dietary Sources
- Human Requirements

**Vitamin D**
- Determination and Sources of Human Requirement
- Use of Vitamin D Preparations in Prevention and Treatment of Disease

**Vitamin E and Other Factors**

## ACCEPTED FOODS

More than 3,800 food brands impartially appraised in ACCEPTED FOODS! Here you have really authoritative data on thousands of advertised products . . . their manufacturing processes, composition, nutritive values and name of their manufacturer or distributor.

Authored by the Council on Foods of the American Medical Association, ACCEPTED FOODS should prove immensely practical for the everyday use of any one interested in human nutrition. Indispensable to physicians, dietitians, home economists and mothers of growing children.

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- Work of the Council on Foods
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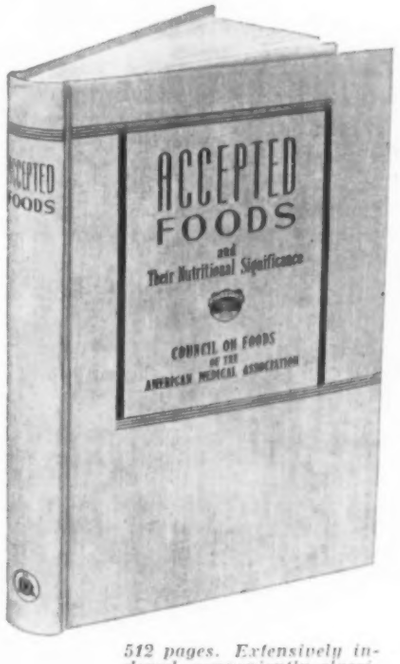
- Grain Products
- Preparations Used in the Feeding of Infants
- Meats, Fish and Sea Foods
- Milk and Milk Products Other Than Butter
- Foods for Special Dietetic Purposes
- Sugars and Syrups
- Vegetables and Mushrooms
- Unclassified and Miscellaneous Foods




*512 pages. Extensively indexed, conveniently classified. 5½x8 inches. Attractive cloth binding. $2.00 postpaid.*

American Medical Association,
535 NORTH DEARBORN STREET • CHICAGO, ILLINOIS

Bread, cheese, liver sausage and more cheese. Arrange them in layers and broil until the cheese has melted.

that can be achieved with a minimum of effort and heat. Perhaps you will find some answers for your puzzle among the following recipes and suggested combinations.

### *Grilled Liver Sausage-Burgers*

½ inch slices of liver sausage
Buttered round buns
Raw, pan fried or French fried Bermuda onion rings
Pickle relish or chili sauce, if desired

Brown slices of liver sausage slowly in butter. Split the buns. Toast if desired. Serve hot liver sausage slices between buttered halves of buns. Add onion, pickle, relish or chili sauce as desired.

### *Liver Sausage and Spaghetti*

½ pound liver sausage
4 ounces medium-sized spaghetti
2 tablespoons butter
⅓ cup cracker crumbs
¼ teaspoon salt
1 cup tomato sauce

Cook spaghetti. Brown the crumbs in 1 tablespoon butter. Slice liver sausage about ½ inch thick and cut into small pieces. Brown in 1 tablespoon butter. Combine crumbs, spaghetti, salt, liver sausage and tomato sauce. Heat. Serves 6.

### *Frankfurters and Baked Bean Salad*

2 cups canned baked beans (drained)
¾ cup finely chopped celery
2 tablespoons chopped green pepper
3 frankfurters, peeled and chopped
Salt to taste
dash cayenne pepper
3 tablespoons mayonnaise
1 tablespoon prepared horseradish greens

Mix together beans, celery, green pepper and frankfurters. Salt to taste and add dash of cayenne. Add horseradish to mayonnaise and mix thoroughly. Blend all ingredients and chill. Serve on lettuce, romaine or with watercress garnish. Serves 6.

### *Frankfurters with Apple Stuffing*

12 frankfurters
¾ cup chopped tart apples
12 narrow strips bacon
Toothpicks

Place frankfurters in cold water. Bring to a boil and remove from water. Cut frankfurters in two, lengthwise and fill each frankfurter, sandwich style, with apples. Wrap one strip of bacon around each frankfurter, securing each end with a toothpick. Place under broiler until bacon is cooked on all sides. Serve very hot.

SATURDAY NIGHT BUFFET SUGGESTION: Clam Juice; Toasted Crackers; Baked Beans; Frankfurters with Apple Stuffing; Buttered Brown Bread Sandwiches; Green Salad Bowl; Lemon Tarts; Assorted Cheese, Coffee.

### *Thuringer Sausage with Noodles and Prunes*

6 Thuringer sausages
4 cups cooked broad noodles
1 cup bread crumbs browned in butter
1 cup cooked prunes
Pimento

Place sausage in pan with ¾ cup of water. When water boils out, brown sausage delicately on all sides. Have noodles hot and pour them into center of deep platter. Cover with bread crumbs. Place sausage on noodles and arrange prunes around edge of platter. Garnish with pimento. Serve very hot.

### *Campfire Scramble*

1 pound pork sausage links
½ cup sliced onions
2 cups diced raw potatoes
6 eggs
1 teaspoon salt
⅛ teaspoon pepper
2 cups canned tomatoes

Fry sausage, remove it from pan and fry onions and potatoes until brown. Beat eggs and add salt, pepper and tomatoes. Pour into pan with potatoes and onion. Add sausages and cook until eggs are set.

### *Frankfurters with Sweet Potatoes and Apples—Camp Style*

2½ cups steamed sweet potatoes
1½ cups thinly sliced tart apples
½ cup brown sugar
3 tablespoons butter
¾ teaspoon salt

Combine potatoes and apples with sugar, butter, and salt, and place in baking pan. Lay frankfurters on potatoes and apples. Cover pan and bake twenty minutes in hot coals.

### *Liver Sausage and Bacon*

4 slices of liver sausage (½ inch thick)
6 or 8 slices of bacon

Pan fry bacon. Keep hot. Pan fry slices of liver sausage slowly in bacon drippings until well browned on both sides. Serve hot on a platter.

# Cinderella's Kitchen

Budget figures demand that you serve that left-over store cake. Here's how. Slice it and lay the pieces in a cake pan. Cover with any canned fruit that has a piquant flavor—the more juice, the better. Beat partially thickened gelatin dessert (lime, lemon or some other light color) and mix with a cup of whipped cream. Spread this mixture over the cake and fruit, and chill for at least an hour. There will be no left over this time.

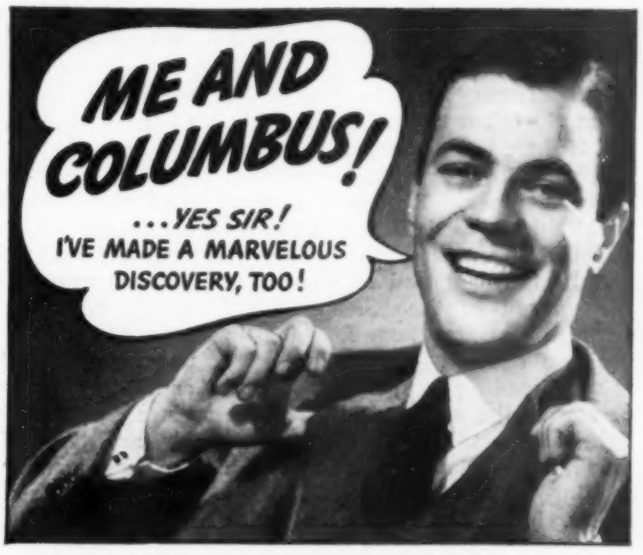
Have you heard? Boiled puddings with that leathery texture can be transformed into chiffon consistency by folding it, when cooked, into fluffy, whipped egg whites.

"What! Only half of that spinach eaten up?" (Distracted mother after lunch.) Here's an idea for tomorrow. Fry bread cubes brown in butter or bacon fat. Add the spinach, finely chopped, a few spoonfuls of bouillon or left-over gravy, and finish by warming in the oven, *en casserole.* Call it Popeye Special.

Variations on an old family favorite are sure to please. The next time you serve waffles, add grated or cubed cheese to the first one. For the second, scatter a handful of pecans over the batter. Finish by mixing cocoa and sugar to the rest of the batter and you'll hear "Encore tomorrow!"

Start with a layer of tuna fish in the bottom of the baking dish. Cover with potato chips and then pour half a can of mushroom soup over them. Repeat this procedure. Pop into the oven and cook until the surface is brown. Presto! Lunch is ready!

This never-fail meal-in-one can be achieved by even the greenest kitchen novice. It was originally a picnic dish, but its possibilities range through the whole year. Empty half a can of beans (baked or limas) into a casserole; arrange frankfurters, wieners or breakfast links on the beans; next add a layer of canned corn. Start over again until the dish is full. Bake till the sausage is done. Strong men cry for it.

SAM: All right, Chris, let's have the low-down! I've been wondering what made you so chipper lately!

CHRIS: The finest-tasting breakfast cereal you ever put in your mouth, Sam—Post's 40% Bran Flakes! They're selling at a new low price now—and I learned a few months ago Post's Bran Flakes are not only mighty fine eatin'—they also give you *two extra benefits* . . .

*FIRST,* Post's Bran Flakes provide just enough bran, a *natural* regulator, that helps protect you against sluggishness. People whose systems are irregular, due to lack of bulk in the diet, find Post's Bran Flakes, eaten daily, a wonderful help.

*SECOND,* Post's Bran Flakes are rich in phosphorus. They are a rich food source of iron, and a good source of Vitamin $B_1$—an essential for maintaining good appetite . . . And today, Post's Bran Flakes come to you at a NEW LOW PRICE!

SIX MONTHS LATER . . .

SAM: You sure were right, old man—I've been eating those swell-tasting Post's Bran Flakes every morning for six months, and believe me, I never felt better in my life!

CHRIS: You said it, Sam! It's a great thing to find a cereal that tastes so *good* and gives you important *extra benefits* as well!

IMPORTANT: Post's Bran Flakes, due to their bulk, are a *regulative* cereal. Constipation due to insufficient bulk in the diet should yield to Post's Bran Flakes, eaten regularly—as a cereal or in muffins. For cases not corrected in this simple manner, a physician should be consulted. Post's Bran Flakes are a Post Cereal—made by General Foods.

# TO SLEEP OR NOT TO SLEEP

(*Continued from page 682*)

later. Those worries can be promptly taken up in the morning, and if there is any danger of forgetting what to worry about, one may write it down. A pencil with a flashlight attached allows one to jot down ideas in the dark.

A host of big and little articles are offered in the "Sleep Shop." Certain ones may answer a family problem exactly. There is a spot ray for reading to protect a second person in the same room from the light; also reading lamps of adjustable height and a lighted, adjustable reading stand for invalids. Bed tables, back rests and adjustable prop pillows are useful in the sick room or when reading in bed are restful and conducive to sleep.

There is a mechanical device for those who have not had sufficient exercise to bring muscular relaxation. Heat pads and lamps ease pain, warm the feet and raise the body temperature. There are soft-voiced alarm clocks, eyeshades to shut out glare and earstops to shut out noise. Most important are beds and bedding. A person wakens, or is aroused to lighter sleep, when he is uncomfortable. If he can turn over easily while asleep, it is not necessary to waken. While physical environment may become a matter of education or habit, there is considerable difference in actual preference. What is a comfortable bed for one person may not be completely comfortable for another. There should be sufficient resiliency in the springs and mattress to provide the utmost comfort. Sailors become accustomed to sleeping in hammocks. It is largely a matter of nationality, habit and preference whether a soft or a hard pillow, thick or thin, or no pillow at all is preferred, although there is often a physiologic reason for the preference. One person may waken feeling tired and annoyed by a thin pillow, while another person would have the same disdain for a thick pillow. Any detail which adds to comfort should be considered.

Short sheets are a common annoyance; they pull out at the bottom of the bed, leaving the feet uncovered or rubbing against a "scratchy" blanket, or the sheets are tucked in at the bottom of the bed but leave the chin unprotected from the irritating blanket. Sheets should be wide enough to tuck under the sides of the mattress and remain practically smooth through the night. The bed itself should be sufficiently long and wide for comfort, and the disadvantage of narrow blankets is well known. A fluffy wool blanket is much warmer in proportion to its weight than other coverings. The air spaces in the nap on the blanket provide warmth in the same manner as the hair or fur coat of an animal, since there is little motion of the air, and it provides insulation. In the same manner, two blankets provide more warmth than one blanket of proportionate weight, because of the "dead air" held between the blankets.

In the summer, a comparatively hard, thin mattress with smooth sheets and a kapok-filled pillow are comfortable.

Proper air conditioning is helpful toward the attainment and maintenance of restful sleep. Fresh air should be sufficiently humidified and heated or cooled to the temperature which is most comfortable. It is possible to buy small room-coolers, air circulators to fit in the windows, humidifiers, circulating fans and electric radiant heaters which are suitable to the sick room, when such matters become vital.

It is wise to consider all the possibilities of changing physical conditions to make them more conducive to restful sleep.

It is interesting to note that in the higher income groups, where individuals are able to afford an electric blanket for instance, if needed, there are more exciting sounds, sights, happenings and thoughts to keep them awake; while in the low income groups, where the mattresses are often lumpy, there are also present the very conditions most conducive to sleep, namely, a lack of excitement and the normal muscular relaxation that follows muscular work.

Some persons always go to sleep easily, and most people sleep better if they take no daytime naps.

The speed of falling asleep is influenced by (1) degree of sleepiness, a personal ability to sleep as to digest food well; (2) fatigue as a result of activity, and (3) impulses received by the brain, such as light and sound. Going to sleep quickly produces a great degree of satisfaction. The usual time required to fall asleep is approximately the same for all ages, about 20 minutes.

Many persons believe that they are not getting enough sleep, when a physical examination would indicate that the amount of sleep is sufficient.

If a person does not go to sleep readily at an appointed hour, he has a choice of the following alternatives:

1. To lie quietly, with eyes closed to rest the eyes, and with muscles relaxed to rest them. In this manner, he may obtain rest which is almost equivalent to sleep.

2. To lie quietly, resting and thinking of anything which serves as a pleasant diversion, such as humming familiar tunes or thinking them, reciting poetry, recalling the various chapters of novels which have been read or recalling various scenes visited during travel, with visualization of details. One might as well enjoy whatever thoughts the mind can recall or invent. You can tell stories to yourself and while away the time pleasantly.

3. Listen to the radio or phonograph.

4. Read for pleasure or for profit.

5. Work, such as desk work, sewing, knitting, housework or anything that needs to be done.

6. Exercise, either mild or strenuous.

It may be readily seen that some of these activities will bring on sleep, while others bring on wakefulness to be followed by eye fatigue or muscular relaxation.

In some experiments where the onset of sleep was studied, a greater number of students fell asleep under disturbing conditions than under the more ideal ones; they were tested first in a dark, quiet room and later in a room with a clock ticking and a light flashing.

With the onset of sleep, the eye movements become slow and inaccurate, and the eyes appear "beady" and dull. The sensation of pain becomes dulled, and awareness of surroundings fades; words are not heard, or they are misunderstood; awareness of self disappears; there is loss of knowledge of time and space; feelings are absent, but visual and auditory images may be preserved in dreams.

NOTE.—Next month, Miss McCray considers dreams and their relation to sleep.

## CAN PARENTS MOLD PERSONALITY?

*(Continued from page 690)*

the encouragement that many of us need for doing things that we can now recognize as essential, if we expect our children to succeed.

But will knowing and applying these laws guarantee our making our children succeed? By no means; for much more than an engaging personality is needed for success, as many a confidence man languishing in jail and many a pleasant but brainless low-salaried employee know to their cost. Brains and character both are requisite to success anywhere.

The essential thing is a delicate balancing of these various factors. Unfortunately, the exact formula for achieving this has not yet been discovered. But parents can do a great deal toward helping their children to achieve success, if they will bear in mind the general principles stated here and then will do their best to supply the educational and other opportunities that are more generally recognized and understood. Only then shall we be doing all that is in our power to help our children make the most of themselves.

## CARBON MONOXIDE MENACE

Contrary to the prevailing opinion that unless carbon monoxide produces complete loss of consciousness, no permanent injury ensues, the gas may have a serious and damaging effect on the health, even without a history of severe acute asphyxiation, Harvey G. Beck, Wilmer H. Schulze and George M. Suter declare in *The Journal* of the American Medical Association.

They cite a series of 150 patients suffering either from anoxemia (deficiency of oxygen in the blood) due to slow asphyxiation or from the residual effects of severe acute asphyxiation. Many patients were victims of imperfect household heating appliances such as gas stoves, bathroom heaters, hot water heaters and coal or coke stoves and furnaces. Others were exposed to carbon monoxide because of their occupations. Most patients had a history of exposure to gas extending over a long period with relief from symptoms when not exposed, although a few even died from the remote effects of slow gassing.


# Stomach X-Rays

**New Studies Scientifically Confirm what "Press and Lift" Test has shown Thousands of Women at Home . . . how proper Support can Make you Look and Feel Years Younger!**

**FIRST PICTURE SHOWS** a woman wearing a corset, designed like most corsets, to squeeze the figure into an unnatural shape! Note how it crowds the stomach *downward!* No wonder this kind of corset makes you look and feel years older.

**SAME WOMAN** wearing an individually-designed Spirella. X-ray shows the stomach was raised about 3 inches! That's why Spirella's *natural* support gives you the smooth graceful lines of a young figure, and makes you feel young too!

**PROVE IT TO YOUR OWN SATISFACTION WITH THE "PRESS AND LIFT" TEST!**

This two-second test is the best way to get a vivid idea of the difference between natural Spirella support, and corsets that squeeze.

**PUT YOUR** hands at your waist and press down! Feel that cramping, downward pressure! That's what most corsets do to you. First X-ray picture above shows how this pressure affects your insides.

**NOW** lower your hands and lift! Notice that grand feeling of lightness and uplift! Now you can understand how a Spirella, *individually designed* for you supports your figure naturally.

**FREE BOOKLET!** Try the "Press and Lift" test tonight. Then look up Spirella in your phone book and make an appointment with your Corsetiere. Or clip the coupon below and get a 16-page illustrated booklet "The New Art of Figure Grooming."

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**OPPORTUNITY FOR AMBITIOUS WOMEN 30 TO 45.** Build up permanent profitable Spirella business of your own. Check here for details ☐

# QUESTIONS AND *Answers*

### Whooping Cough Vaccine

*To the Editor:*—What is the correct administration of whooping cough vaccine?

M. F., Alabama.

*Answer.*—For whooping cough immunization, the amount of vaccine injected and not merely the number of injections should determine the value of the procedure.

For some time two injections of vaccine were made on each of three treatment days. Consequently the total number of injections was six. At present there is a so-called double strength vaccine. If this is used the total number of injections is three instead of six.

### Wheat Germ

*To the Editor:*—What is it that accounts for the wide range in price of wheat germ? How can one determine what kind to purchase? What are the nutritive values of the kinds of wheat germ on the market?

Which unit in measuring the potency of vitamin content is used most frequently: Sherman, U. S. P. or International units?

Does commercial canning lower the vitamin and mineral values of the vegetable or fruit appreciably?

Do frozen fruits and vegetables have the same nutritive values as fresh produce?

R. W., New Jersey.

*Answer.*—Wheat germ varies in price, as do other food items, and for the same reasons. Crude wheat germ from the mill should be cheaper than wheat germ which has been carefully selected, purified, toasted slightly to improve its palatability and keeping qualities and assayed to show that its vitamin potency is high. The kind of wheat germ to purchase is largely a matter of personal choice. Several brands have been considered by the Council on Foods and accepted. The nutritive values of wheat germ available on the market vary considerably, but in general, wheat germ may be expected to provide from about 8 to 15 international units of vitamin $B_1$ to the gram. One ounce of wheat germ may be rationally calculated to provide more than the daily minimum requirements of vitamin $B_1$ for the adult.

The first units of measurement devised and generally adopted were those developed by Professor Sherman and his students at Columbia University. These were based on growth response of experimental animals. It was later found that animals vary considerably in their ability to grow and hence the international units of a committee of the League of Nations were introduced and are being widely adopted. The international units and U. S. P. units are as nearly identical in value as it is possible to make them. In the international system, certain substances, often the pure vitamins, are defined as standards of reference, and the material to be assayed is compared, as to its effects, with the standard substances.

Except for the vitamin $B_1$ which is destroyed to some extent by heating, the vitamin and mineral value of foods is lessened only slightly as a result of cooking. The minerals may be lost, however, when the water in which the foods are cooked is discarded.

The quick frozen fruits and vegetables now obtainable do have, in general, the same nutritive value as the fresh fruits and vegetables from which they are prepared. Both should be considered as perishable products.

*Keystone View*

**In whooping cough immunization the quantity and strength of the vaccine, rather than the number of injections, should determine the method. Double strength vaccine requires only 3 injections.**

### Gonorrhea

*To the Editor:*—Is it true that gonococci [germs of gonorrhea] will remain latent in the tissue for a period of ten years, even though there has been no evidence of the disease since? Can these latent germs cause soreness and friction of the knee joint?

Would there be any contraindications to pregnancy if a woman had had gonorrhea ten years previously?

E. W., Texas.

*Answer.*—The consensus of opinion among urologists today is, in effect, that gonococci do not live in the tissue for a period of ten years. There may be an occasional exception to this rule. According to many urologists, gonococci do not live in the tissue for a period longer than eighteen months.

Latent germs may cause soreness and friction of the knee joint. But, on the other hand, it is more likely that these symptoms are due to infection elsewhere.

There are no contraindications to pregnancy; however, it might be a good plan to have a careful local examination by a competent gynecologist or urologist.

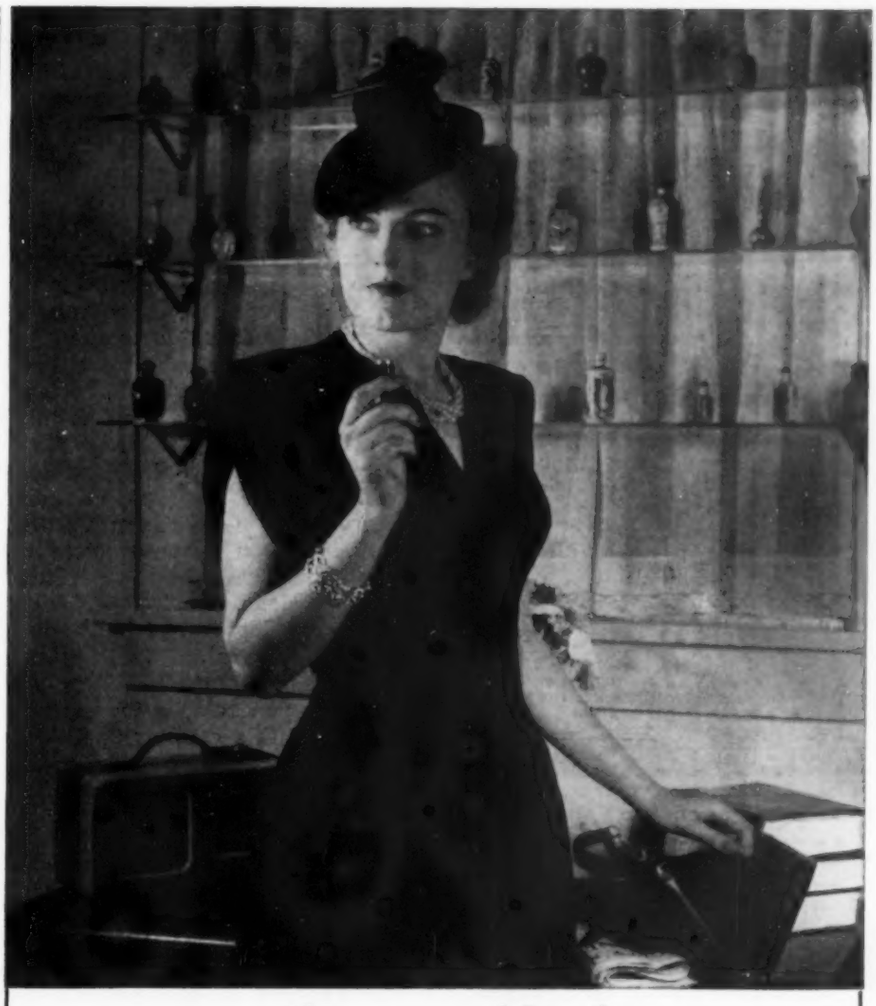
### Sterility

*To the Editor:*—I had an operation for removal of both fallopian tubes and one ovary. Is there a surgeon in this country who can perform an operation on women in my condition to make it possible for the ovum to reach the uterus?

W. E. P., California.

*Answer.*—Medicine and surgery are confronted by many difficulties which thus far have not been solved. Diseased parts may be healed by natural processes or by treatment, and damaged structures may be removed by operations. No highly satisfactory methods have been devised for the replacement of organs or tissues which have been destroyed by disease or by injury, or those which have been removed by operative procedures. Skin grafting may be considered an exception to this general statement.

According to the statement, both uterine tubes have been removed, but one ovary remains. This probably means that the egg is formed in the ovary but cannot be fertilized and transported to the womb



*Beauty as Usual*

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for its development into the embryo and fetus. Operations have been devised to make an artificial opening in the wall of the womb through which the egg or ovum can migrate. It is perfectly possible to do this operation, but one difficulty is to maintain the opening and to have it function as a tube. The majority of these operations are not successful, so the surgeon usually hesitates to perform them, especially in view of the fact that they entail some risk. Before such an operation is performed, it is important to determine as far as possible that there is no other difficulty with either marriage partner which would interfere with procreation.

Surgeons who specialize in diseases of women are competent to evaluate such cases and to perform these operations. Their skill varies, but no one doctor has knowledge which others working in the same field do not possess. There are many able gynecologic surgeons in all parts of this country.

### Milk-Producing Ability of Mothers

*To the Editor:*—Is there any relation between age and the milk-producing ability of a mother? For example, if the mother is 45 years old when she has her first baby, does that mean that the chances of the baby being breast fed are much less than they are when the mother is younger? M. J. S., Kansas.

*Answer.*—There is an impression among many persons that the milk-producing ability is much less in elderly mothers, especially with the first baby. This is just an impression and is not founded on any substantial evidence. Whether or not age has any bearing on the ability of a woman to produce milk is still an unanswered question.

It is probable that factors other than age enter into the problem of milk production in the elderly mother. Certainly the factor of child bearing at this time might so disturb the usual equilibrium and routine of the mother that the production of milk might well be limited. If the prospective mother could adjust her mental environment and decide that she is going to nurse her baby, she probably will in spite of her age. We have known of mothers in the last few years, well over 40, who decided that they were going to nurse their first babies and did successfully.

### Soft vs. Hard Water for Health

*To the Editor:*—Salesmen of water-softening agents have occasionally reported that softened water has been found beneficial in certain types of disorders such as arthritis, gallstones, intestinal disorders and skin ailments.

Is there substantiation of such claims? Is there any advantage in the use of water from which all calcium and magnesium has been removed? Can it be said that hard water is detrimental to human health? G. R., New York.

*Answer.*—Both calcium and magnesium are essential to the diet of both animals and human beings. The calcium requirement has been illustrated by the need which growing children have for calcium in forming sound bones; this they may obtain in milk. It has also recently been shown experimentally that a lack of magnesium in the diet of certain animals produces a variety of disturbances, at least one of which involves the proper utilization of calcium in the body. So the mere presence of calcium and magnesium in drinking water could scarcely be called harmful. Ordinarily, freely chosen diets will usually contain sufficient amounts of these substances irrespective of any which may be present in the water supply.

Commercially, hard water is of great importance: to the laundry industry because soap or softener must be used to dispose of the excess calcium and magnesium before a proper lather or cleansing action can be obtained; and to all users of boilers because of the scale formed when hard water is heated. The analogy, with the human machine, does not follow, except possibly so far as external use is concerned. Soft water increases the detergent action of soaps, producing lather with less free alkali. Such a situation conceivably benefits the skin because here the natural oils are not so likely to be removed. However, the term "skin ailments" as used by the correspondent covers too many different sorts of conditions for a more specific answer to that portion of the query.

In certain sections of the United States and in Mexico where the drinking water contains small amounts of fluoride, there occurs a somewhat unsightly condition of

the teeth called "mottled enamel." Such teeth, although discolored, seem to be less apt to decay than other teeth. However, it is not at all certain that the same factor (fluoride) that causes the mottling is also responsible for the supposed relative immunity to decay. It is, of course, not the hardness of the water that is of importance in this particular problem.

There is no evidence that "arthritis, gallstones and intestinal disorders" are influenced appreciably, one way or the other, by the hardness or softness of ordinary drinking water.

### Baking Flour

*To the Editor:*—What effect would the use of all whole wheat bakery products instead of white flour products have upon an individual?

G. L., Illinois.

*Answer.*—From the nutritional point of view whole wheat flour and whole wheat bakery products have a number of advantages over white flour and white flour products. Patent white flour contains about 17 international units of vitamin $B_1$ (thiamin) while whole wheat contains from 118 to 175 international units of vitamin $B_1$ per hundred grams. Whole wheat is also considerably richer than white flour in other factors of the vitamin B complex as well as in iron, phosphorus and calcium.

Available evidence indicates that the average American diet is apt to be somewhat deficient in vitamin $B_1$ and this deficiency appears to be largely due to the widespread substitution of refined cereal products for the whole grains. The choice of whole grain versus white flour products in any particular diet depends on a number of individual circumstances. Among these are the composition of the diet as a whole and the amount of vitamin $B_1$ supplied by foods other than cereals. The effect of the bran of the whole wheat on the digestive tract of the individual must also be taken into consideration.

While it is believed that the amount of bran contained in the average whole wheat product is not harmful to the digestive tract of the normal individual, it must be recognized that there are some individuals with abnormally sensitive intestinal tracts who cannot tolerate even this small amount of bran. If

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whole cereal products are not used however, the deficiency of vitamin $B_1$, iron and other dietary essentials which would be supplied by these foods should be compensated for by the use of other foods rich in these factors.

### Radium and Artificial Menopause

*To the Editor:*—Does exposure of the ovaries to radium, which brings on an artificial menopause and complete cessation of menstruation, necessarily sterilize the ovaries? That is, must ovulation be stopped in order to stop menstruation?

G. B., South Carolina.

*Answer.*—Individual sensitivity to the action of radium cannot be predicted, but as a rule, radium dosage sufficient to terminate menstruation will result in complete cessation of ovulation also. Smaller dosage aimed at merely decreasing the menstrual flow is not advised because of the uncertainty of the individual's reaction.

### Roquefort Cheese

*To the Editor:*—What is Roquefort cheese made of? Does it contain salt?

M. A., California.

*Answer.*—True Roquefort cheese is made from sheep's milk and owes its sharp flavor to a special mold, Penicillium glaucum or Penicillium roqueforti, with which it is inoculated. It is reported by workers in this field that an imitation Roquefort type cheese is made from cow's milk in the United States. According to these authors the average salt content of Roquefort cheese is 4.14 per cent. Roquefort cheese has a much higher salt content than Cheddar, cream or cottage cheese probably because of the fact that they are rubbed with salt to check the development of mold on the surface during the ripening period.

### Singing While Dancing

*To the Editor:*—Supervisors of music in various schools throughout the country have been objecting to the practice of having elementary school children sing while taking part in activities such as dancing or running, and in certain types of dancing games. The claim is made that such a practice is harmful to the voice and should be eliminated.

As the greatest part of the enjoyment of certain exercises and games is gained through singing, we are anxious not to have this feature removed unless there is some reason showing that it is harmful.

Would you kindly give me your opinion on this subject?

G. D., New York.

*Answer.*—No harm would be done to the voice or larynx of elementary school children by singing while taking part in activities such as dancing or running, or in any type of dancing game, provided that all phases of the activities, physical and vocal, are moderate in degree. Children often have hemorrhages resulting in hematomas [tumors containing effused blood] on the vocal cords and impairment of the voice when they use the larynx excessively. Such use constitutes vocal abuse and might be in the form of shouting, screaming, yelling or singing loudly. The tendency would be to abuse the voice in proportion as the general physical activity exceeded moderate limits. It would seem probable that the objections raised by supervisors of music were based upon excessive activities.

### Vision and Flickering Lights

*To the Editor:*—Does flickering light, dim light or a movement of the paper you are reading, such as when riding in a car, weaken your eyes, if you continue reading after your eyes begin to hurt?

A. V., Michigan.

*Answer.*—If you walked over a rough uphill road without stopping, you would find that your legs would become extremely tired but would suffer no permanent damage. It is much the same as reading in poor light or in a car or a train. Provided the eyes are not diseased to begin with or are not nearsighted, no permanent damage will result from their abuse under adverse conditions, even if persisted in for a rather long time. But the energy required to do eye work under such circumstances is out of all proportion to any possible advantage to be gained, and the habit is to be deprecated.

But there are several classes of persons who should not even try to do close work under the adverse circumstances described. In the

first place, some nearsighted individuals, particularly persons under the age of 30 or those with a high degree of that ocular defect, should not do this. Definite permanent damage can come to such persons, as it can also to many people with a lack of proper muscular balance of the two eyes. This does not mean persons with an outright squint, but rather those with a tendency toward a squint which under ordinary circumstances is suppressed but becomes apparent when they are tired or sick. If such eyes are abused by use under the adverse circumstances described, they respond with definite symptoms of eye ache and headache, but no permanent damage results.

On the whole, it is much better to play safe and use the eyes for close work only when there is sufficient illumination. It is considered that the minimum should be 10 foot-candles. Testing by a properly equipped and trained tester will tell you just how much light you are using and how it can be brought up to standard if it is deficient.

### Inheritance of Eye Defects

*To the Editor:*—Can eye defects be inherited? I have a sister whose eyelids do not function normally. They cover the eyes, but will not open and close normally.

I am primarily concerned about whether or not I might have children who could inherit this defect. As far as I know, there is no blindness in my mother's or father's family. Neither do I know what caused my sister's handicap; it was congenital. My mother thinks it was due to a fright caused by a blind man during her pregnancy.

L. C., Kentucky.

*Answer.*—Some eye defects can be inherited. But abnormalities of the lids are rarely due to inheritance, unless other members of the family, including uncles, aunts and cousins, have had similar defects. Where only one member of the family is afflicted, one can feel sure that the defect will not appear in the next generation. Faults of diet, especially deficiency of vitamins during pregnancy, might cause eye defects, but such cases are almost unknown in this country. There is little reason to think that fright, or other shock during pregnancy, causes defects of the eye.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

## THE MECHANISM OF CONCUSSION

The mechanism involved in concussion as recently demonstrated by W. W. Scott, Chicago, is explained in *The Journal* of the American Medical Association.

"In an attempt to elucidate certain aspects of the physiology of concussion," *The Journal* says, "Scott succeeded in demonstrating in dogs a method for recording changes in intracranial (within the skull) pressure produced by a blow to the head. As a result of these studies, Scott feels that loss of consciousness due to a blow on the head may possibly be explained on the basis of short lasting, complete cerebral anemia (lack of blood in the brain).

"A blow of sufficient force to cause unconsciousness results in a rise in intracranial pressure considerably above that of the systolic blood pressure (the pressure in the arteries at the time of the heart's contraction)." Such a rise in pressure would force the blood out of the brain.

"After the blow," *The Journal* explains, "the intracranial pressure returns to the normal level and remains there. Furthermore, a loss of consciousness occurs in the dog when the intracranial pressure is raised to a level above that of the arterial blood pressure even though this pressure is maintained for only one second. Scott also demonstrated that, when the intracranial pressure does not exceed the systolic blood pressure, loss of consciousness does not occur even though the lower intracranial pressure is maintained for as long as thirty minutes. He further suggests that the set of symptoms which is known as 'punch drunk' may be the result of damage to the central nervous tissue from cumulative anoxia (lack of oxygen) caused by repeated, short lasting anemias produced in this manner."

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# Facts about the Menopause

(*Continued from page 694*)

the family and in other relationships. We are all familiar with the analogy of individuals who try to make up for a loss or a handicap in one physical function with an increased attempt to emphasize the value of other functions. For example, boys who feel inferior to their friends in athletic prowess try to make up for it in the classroom by a spurt of intellectual effort to obtain a brilliant standing. In the same way some young women try to rationalize their distaste for marriage and reproduction by an intense interest in a career which may consume all their interest. Even among animals the same biologic tendency can be clearly seen, that is, the attempt of the organism to make up for the loss or diminution in a function. The difference, however, between human beings and animals is that the former possess the mental capacity to guide their instincts. But overcompensation in human beings often fails, because by its very nature it is not controlled by the conscious intellect, it is an avoidance of seeing the real issue.

The same tendency to overcompensate is meanwhile present in the other marital partner. The reaction to the wife's burst of overactivity often brings to the attention of the husband the fact that he too is aging somewhat. This period, the prime of life for the man, may be a time when he is trying to prove to himself that he still is as good as the younger men by playing a few extra holes of golf, getting overenthusiastic about business ideas and wanting to have lots of attention from women at parties. The mutual fluctuations in temperament at this time may cause a strained atmosphere in the home.

A sense of inferiority may affect a woman's relations with her friends, particularly with those a few years younger. She again may feel unjustifiably that she is not quite so popular as they are and may become much more aggressive in her demands for attention. When women begin to worry too much about themselves, about how they look, how well they are liked, how the members of their family are treating them—it is time to say, "Now let's see, of what real value can I be, how can I substitute real maturity for mere prettiness, and how can I best serve my function as one of the mainstays of my family and a valuable member of my community?" The woman who accepts her new status in this way preserves her mental good health, and she may be rewarded by discovering that she shows an increased attractiveness and increased charm of personality which is quite contradictory to some of the gloomy myths engendered by superstition.

The normal woman, then, need have no special apprehension at the approach of this mature period of her life.

Now to be more specific: Precisely, how can a woman minimize the emotional and physical discomfort that may be associated with the menopause? So far as intangible doubts, misgivings, tension and fears are concerned, let me refer again to the two ways by which individuals deal with new developments in their biologic drives. Each period of life is associated with the necessity of learning how to adjust to the new situation. Obviously learning means a certain amount of trial and error at first. As I have already hinted, it is a common attitude for one to wish to remain in a period of life in which one has obtained considerable satisfaction.

At the time of the menopause, women fear to some degree the uncertainty connected with the change. I should like to make several constructive suggestions. It is necessary for the mature woman to enlarge and deepen the horizon of her interests and activities to make up for what she may unconsciously feel as a certain amount of loss of her capacities. The understanding guidance of young sons and daughters, the sympathetic love for a husband who also is meeting the problems of middle life or ripening years are important aids. We live today in a complicated society where emotional maturity and good judgment have perhaps a higher value than ever before. Women play a great part in helping to build up a community, in shaping policies and ideals. Life can be extremely rich for a woman who is aware of her usefulness and of the best ways in which she can help those she loves. However, this is not entirely a period of new duties. There should be new relaxation, more leisure, as a woman grows older—more time to read, to listen to music. Through widened interests and activities, a woman can continue to enhance the charm of her personality.

There are, however, many women who try bravely to hide their doubts and misgivings and perhaps try too hard to present a cheerful, stable outward attitude when life is difficult for them. This attitude of false bravery or of martyrdom is really one of avoiding the necessity for learning how to deal realistically with problems that may arise. To these individuals, I would suggest professional help, the family physician or a psychiatrist, rather than a well meaning but perhaps too emotional friend. In talking out problems with an experienced person who has an objective, unbiased point of view and scientific knowledge, anxiety is diminished, and the mystery is stripped from problems which may then be brought to some practical solution. Fears, like germs, die when exposed to the bright sunlight.

# BOOKS ON HEALTH

### Non-Profit Hospital Service Plans

By C. Rufus Rorem, Ph.D. Paper. Price, 50 cents. Pp. 130. Chicago: American Hospital Association, 1940.

On Jan. 1, 1940, sixty group hospitalization plans with an estimated enrolment of 4,500,000 had been approved as meeting the standards of the American Hospital Association. "No two plans are alike in detail, but they are all alike in principle." The differences in organization and operation and the essential steps in the formation of a plan are given. The actuarial basis of the plans is explained and income limits on subscribers are opposed. Existing plans do not provide for the indigent or low-income classes, and there are several rather indefinite references to plans for "ward service" to cover such classes, which it seems to be assumed will include medical care, possibly provided as at present by unpaid physicians. The disputed question of entrance of such group plans into the field of medical care is not discussed; but there is a clear indication that the organization of plans to provide both medical and hospital benefits or the expansion of present group hospitalization organizations to include medical benefits is favored. It appears that the inclusion of medical benefits would be on a service basis and not on a cash basis, as approved by the House of Delegates of the American Medical Association.

A. M. Simons.

### Life: A Psychological Survey

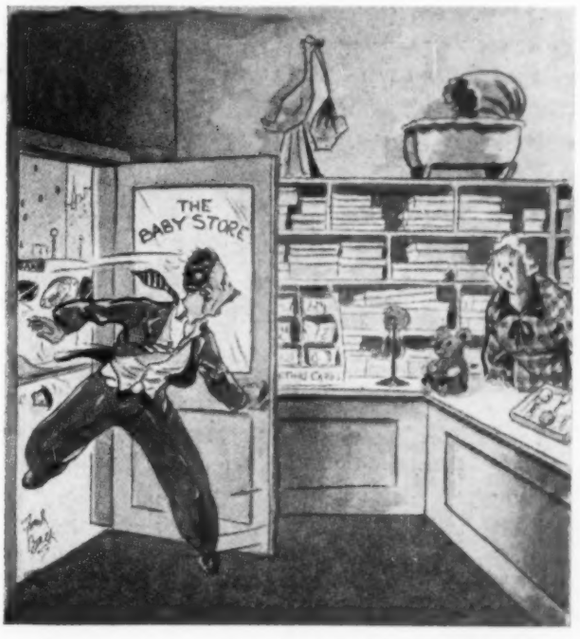
By Sidney L. Pressey, J. Elliott Janney and Raymond G. Kuhlen. Cloth. Price, $2.50. Pp. 654. New York: Harper & Brothers, 1939.

This volume is an unusual introductory text for students of psychology. It is an attempt to integrate psychology with sociology and physiology, which it does after a fashion. There are three parts: The first part is devoted to a discussion of the conditions and circumstances of life, in which the authors present statistics of populations, marital relationships, occupations, community and neighborhood factors, income distributions, as well as educational information. They also discuss what they call the invisible environment, that is, the socio-psychologic aspect of life in which such topics as the relationship of woman to the rest of society, humanitarianism, the place of recreation and the ideology of science are interpreted to play a part.

The second part of the book concerns itself with growth curves of various sorts, physical and mental, height and weight, morbidity and mortality, as well as learning curves and changes in interests as life develops. There is much interesting material presented in regard to the social problems which come up as the child develops. Various situations which arise in the first year, later years and adolescence are important in showing the maturation of the child, and this leads into an evaluation of various life tasks such as vocational interests, work habits and job placement which eventually will enter into the adjustment of the developing person.

Finally, the authors discuss such problems of life as efficiency in adjustment. Here we get considerable discussion of applied psychology in the fields of fatigue, emotional adjustment and changes in attitude and other features which might be considered more purely psychologic than the factors discussed in the first two parts.

Most psychologists will feel that this textbook has gone too far astray, although the value that it has in showing the relationship of psychology to allied sciences cannot be overlooked. It would not prove to be good for an introductory course in psychology for the medical student, nor would it give the nonpsychiatric physician much understanding of medical psychology. The psychiatrist, however, may find it possible to use this

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### Functional Human Anatomy

By Cleveland Pendleton Hickman, Ph.D. Cloth. Price, $3.75. Pp. 501. New York: Prentice-Hall, Inc., 1940.

The title "Human Anatomy" is somewhat misleading: The book is an attempt to lead elementary students of zoology up to a consideration of human anatomy by way of dissection of the cat and frog and butchers "pulls." The human skeleton is studied directly.

Less consideration is given to evolution than might have been expected of a zoologist, and it is rather startling to find everywhere acceptance of the idea of design—"nature intended."

There are a few mistakes in the elementary facts presented, as the statement that "the plexus of Meissner lies between the two layers of muscle in the intestine," and "in man at rest the heart pumps less than 5 pints per minute."

A little carelessness in the use of terms and words may be corrected in later editions. For example, "median" is used for medial; the word "human" is used as a noun, which Webster's dictionary says is ordinarily a humorous use and others. The statement "twins may be of the same or of the opposite sex" is rather obvious.

Students would learn human anatomy more satisfactorily by studying at first hand the excellent textbooks or atlases already available.

B. C. H. HARVEY.

### It's Nice to Know People Like You

By Harry Walker Hepner. Cloth. Price, $1.50. Pp. 172. New York: D. Appleton-Century Company, Inc., 1939.

This is a self-help book of the ilk of so many which are appearing at the present time. The author attempts to show the reader how to adjust to other persons, how to make a favorable impression and how to make people like him. The author, a psychologist, works as an occasional consultant in customer and employer relations for business firms, has given courses in personality development. The present book contains short summaries of points that he has tried to stress in smoothing out human relationships. The information which is presented should be known to any one with common sense. Unfortunately, it is hard to put abstract advice to work. For instance, the ingratiating smile that he recommends only too often is a smirk when it is put on deliberately.

Five of the chapters are devoted to the problem of sizing up people and contain discussions of such matters as "sensing their problems," and "think of them as grown-up kids," "study their friends," and "sense the hidden meaning." The author also makes some comments about how to make a pleasant contact and how to acquire poise, self-confidence and proper reactions to reprimands. At the end of each chapter there are a few questions for the reader, and the answers are given in a single sentence in the back. Since there are, unfortunately, too many alternative answers to be given in such a short space, the value of these questions and answers is almost nil.

The book is pleasantly written, definitely entertaining and encouraging. Beyond the pleasant style, there is nothing about it to recommend it over so many other books of a similar nature which have been written.

L. S. S.

### Motion Pictures in Adult Education

By T. R. Adam. Paper. Price, 75 cents. Pp. 94. New York: American Association for Adult Education, 1940.

This book reviews motion pictures in adult education and discusses censorship and monopoly, the relationship of civic groups to the motion picture industry and the development of study guides for use with current commercial entertainment films, the need for consumer organization, the educational aspects of the motion picture and the public right to culture. It points out the educational opportunities inherent in present day motion picture production but unrealized because of lack of coordination between studio, distributor, educator and consumer. The author discusses government production of motion pictures which he summarizes as follows, "The government film production may be said to have reached a dead center between careful standards of learning and concealed publicity, degenerating perhaps into open propaganda."

He points out the importance of the use of the motion picture in health education, but he deplores the failure of medical authorities or public health administrators to establish a national organization for distribution of health movies. For this lack he condemns the medical profession, but a few pages farther on in respect to universities, he points out, "The assumption of heavy responsibilities merely for the good of the general public, without compensatory return from student fees or endowments, would wreck the financial structure of many universities and learned societies." Just why the medical profession should not be included among the learned societies is difficult to understand. Except for this inconsistency, the book is an interesting, sound, practical and constructive contribution to the literature of adult education. It is particularly notable for a fast-moving incisive style which makes it easy to read. W. W. Bauer, M.D.

### The Communicable Diseases

By A. M. Stimson. Paper. Pp. 111, Washington, D. C.: U. S. Public Health Service, 1939.

Health educators have reacted so strongly to teaching about disease that in many cases the problem of disease prevention and control has been seriously neglected. This problem is brought to the attention of the teacher effectively in this booklet. This government publication is prepared for the use of teachers. The body of the publications presents facts about the principal communicable diseases. There is an excellent glossary. Teachers in junior and senior high schools will want this publication.

J. Mace Andress, Ph.D.

### Table Games—How to Make and How to Play Them

By Ray J. Marran. Price, $1.50. Pp. 122. Illustrated. New York: A. S. Barnes & Co., 1939.

Copiously illustrated, this book contains all directions for making and enjoying table games. It would be extremely useful to parents of young children who are continually called on to think up new and novel pastimes for their entertainment. It would also be welcomed by the convalescent who must find quiet things to do and whose resources—financial or otherwise—are limited.

Sibyl Winser Johnston.

### The Development of Certain Motor Skills and Play Activities in Young Children

By Theresa Dower Jones, Ph.D. Cloth. Price, $1.85. Pp. 180. New York: Teachers College, Columbia University, 1939.

Dr. Jones has made an interesting study of a group of twenty-four youngsters, half of whom came from economically superior families and the other half from various working class families. These children were studied with regard to the development of particular motor traits. Each child was given wheeled toys of one sort or another, beginning at 22 months and ending at 48 months, and his conduct in a specially controlled environment was observed. Four vehicles were used: a tricycle or kiddie-car, a dump truck, a doll carriage and a wagon. It is interesting to note the various factors which were important. Home environment was definitely related to the development of motor skills in the use of all wheeled vehicles; playmates a little bit older inspired the child; availability of a variety of play materials, outdoor play space, and no adults except the parents living in the household, all were favorable factors. There were noticeable sex differences.

The author's recommendations are: If only one wheeled plaything can be provided, a wise choice would be a dump truck, which can be used from the youngest age level to 4 years. The second choice would be a sturdy kiddie-car equipped with pedals, which provides opportunity for various types of activity. A wagon was found to be the most frequently used among these play materials.

L. S. S.

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American Hospital Association, 18 E. Division St., Chicago.

D. Appleton-Century Company, 35 W. 32nd St., New York City.

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# GRINDSTONES (Continued from page 716)

or autopsy, the industrial hygienist speculates as to what might have taken place decades and generations past. In the dressing of natural grindstones, clouds of silica dust may be produced. Each day these workers inhaled many millions of fine dust particles. These particles reach the lungs and traverse the thin walls of air sacs. No disease was produced from one day's breathing of these dust particles, or one month. After years of such exposure, enough scar tissue was built up around deposits from these dust particles to hamper the breathing of workers, to limit the expansion of their chests, to promote fatigue, to incapacitate for further work, to bring about especial proneness to tuberculosis. Then the damage was done. No prospect of elimination of the disease, no prospect of improvement, every prospect of progressive incapacity. This was the probable lot of at least some of Grindstone's workers. They were the victims of Grindstone's second product—silicosis.

If there be doubters, it may be shown with certainty that among other workers in this industry located in another state, in plants that survived the coming of carborundum by turning its sandstone operations into other channels, at least 55 per cent of workers examined with the x-ray presented evidences of injury to the lungs, including 29 per cent with definite silicosis.

Just as Grindstone City's major product, grindstones, traveled to many places over the world, so the second product, silicosis, was produced in far-flung places. Among many other applications, natural grindstones were used in the edging of axes. In Bolles' "Industrial History of the United States" (1878), there appears an engaging description of the ax industry in America. Some of its tragic description is here shown:

"The next stage in the progress of the ax toward completion brings us to the grinding and polishing departments. Some idea of the relative importance of this branch of the manufacture may be had from the fact that it costs $100 worth of grindstones daily to bring the ax to the marketable stage, to say nothing of the immense expenditure of emery in polishing afterwards. Huge stones from Nova Scotia and the West lie about the shopyards, full 7 feet in diameter, many of them; and in no longer than three weeks' time they are used up. Many of the men ride on 'horses' while grinding, thus enabling them to bring their whole bodily avoirdupois to aid the process of abrasion, while the fine dust flies in clouds from the stones in every direction, notwithstanding the stones are completely deluged with water.

"The men in this section are, from their peculiarly hazardous work, ruled out of all the life insurance companies; since the constant inhalation of the grit and bits of steel thrown off in the process induces the 'grinders' consumption,' as it is rightly termed, from which a premature death is rarely averted. It is said that Americans will not work in these rooms, which are filled by French Canadians, who stop a few years, and then go home to linger a while and die."

Reference to huge stones from the "West" may refer to Grindstone City stones, but this is not known for certain. Years later (1920) another observer of grinders' consumption in the ax grinding industry, noted as a "hotbed" of silicosis, includes in his report this letter:

"I have seen quite a number of cases of so-called grinders' consumption. The symptoms are excessive shortness of breath on slight exertion, dry cough and great prostration. The grinders are from the Polanders and Finns for the past dozen years. The disease takes hold of them more frequently and is more rapidly fatal than among the grinders of former years and of other nationalities. When I came here 40 years ago I found the victims among the Yankees who had ground some 20 years before. Those could grind 18 or 20 years before having to give it up. The French-Canadians were then grinding. They could work 12 to 16 years. They became frightened off and the Swedes took up the work. They would get the disease in 8 or 10 years. Now the Finns and Polanders are at it, and they last only 3 to 5 years, and the disease is more common among them."

Some idea of the quantity of dust formerly produced in grinding with natural silica grindstone may be gained from this statement:

"A stone of 72 inches in diameter weighs approximately 2 tons. One 84 inches across weighs 3 tons. Stones vary greatly in thickness, viz., from 8 to 13 inches, an ax or a tool stone usually being about 11 inches, while that used for machetes is about 13 inches wide. A stone 70 inches by 12 inches, used to grind axes and tools, will last about one month, while that used for machetes will last three months. Stones are discarded when they reach a diameter of 29 inches. From 40 to 50 stones on an average are used up each month throughout the year."

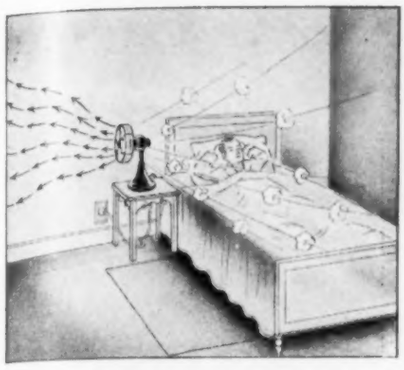
Without condemnation, solely as an act of the historian, it is recorded that the manufacturers of natural silica grindstone everywhere, without guile or any evil design may have furnished many workers over the world a work material which insidiously brought about the end of their days. Thus, some of both the makers and users of these stone wheels apparently were destroyed by this king of occupational diseases—silicosis.

### *A Different Day*

Happier are work conditions attending many of today's dusty trades. Dust-producing machines and operations are likely to be surrounded by exhaust systems which maintain dust concentrations below dangerous thresholds. The quantity of dust present in the air may be measured by cunning instruments that permit the counting of each particle. Various substances may be added to silica to render it less injurious. Essentially, all grinding is carried out with carborundum or other synthetic abrasives, the dusts of which are almost entirely harmless. X-ray examinations of the chests of workers may reveal the early beginnings of dusty lung diseases. Comparatively few workers in this country are now wholly unprotected against the ravages of silica dust. The grindstone makers in Michigan and elsewhere, working before the days of the x-rays, dust counts, petrographic microscopes, adequate respirators and efficient dust arresters—in fact before the day of any scientific knowledge of silicosis—furnished a part of the doleful experience that makes occupational disease exposures no longer tolerable.

# FACTS about FANS

By W. E. CARSON



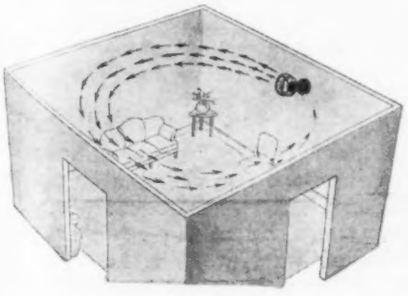
A MORE general use of electric fans, particularly if certain principles are observed in their use, would make for greater health and comfort.

A hot stuffy bedroom, by means of a properly placed fan, may be made comparatively comfortable and allow a refreshing nights sleep.

A fan giving a direct or continuous air current, is to be preferred to the oscillating type. It is self-evident that a fan does not *cool* the air, but acts to give comfort only by preventing the accumulation of a stagnant or dead layer of air from collecting around the individual. For this purpose a gentle *continuous* current of air is more effective than the intermittent puffs of an oscillating fan. Moreover the non-oscillating fan is less expensive than the oscillating type, is simpler in construction and is more easily kept in working order.

It is true that the oscillating mechanism can, in most makes of fans, be disconnected and used as a non-oscillating fan.

In selecting the location for the fan, the aim should be to place it in such a position that a gentle air current is produced around the room and not directed to blow on the occupants of the room. The breeze should be barely perceptible, for otherwise there may be danger of causing colds.

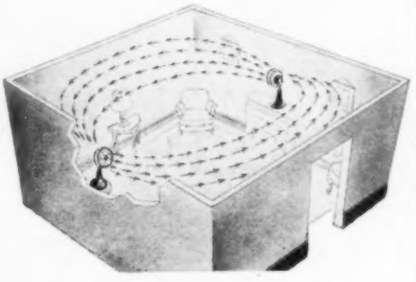


The ideal arrangement for a small or medium sized room is to have the fan on the wall slightly above the heads of the occupants and so placed that the air current will be directed at an angle to cause it to impinge successively on the different walls in the room, thus producing a gentle circular current of air.

For larger rooms, two fans may be used. One fan should be placed so that it reenforces the breeze of the other fan.

Some persons object to using an electric fan in the bedroom because they fear it will induce colds, neuritis or rheumatic symptoms. If the precaution is taken to make sure that the body is not in direct line of the air current, there need be no fear of such a result. The fan may be placed on the wall as noted above. Another excellent position for the fan is on a table near the head of the bed, with the fan turned to blow away from the bed.

When so placed, a gentle current of air is produced as the fan gathers



air and produces its maximum effect away from the bed. This current will be imperceptible, but will be sufficient to prevent a warm layer of air from gathering around the would-be sleeper.

Another satisfactory place for the fan is on the floor at the side of the bed, so that the breeze will be reflected from the walls of the room and cause a gentle movement of air.

An oscillating fan is preferred only where it is desired to keep flies or other insects from lighting on foodstuffs.

Study conditions and use judgment in placing fans so that the breeze shall not be felt but rather so that a gentle, continuous circular current of air will be set in motion around the room.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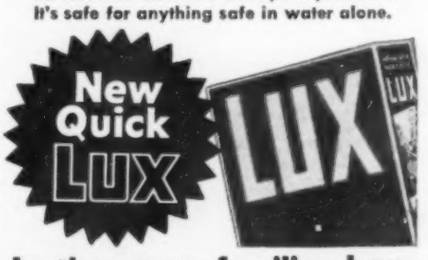


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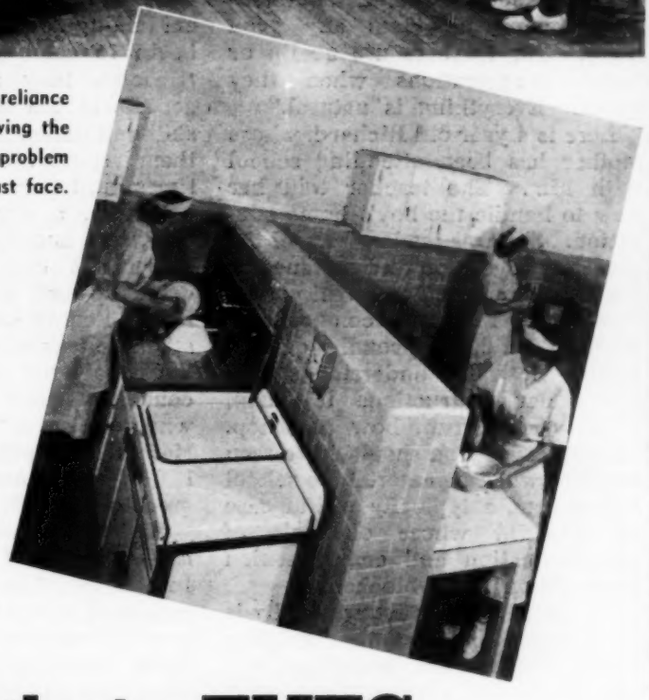
# They LISTEN

"DID you hear?" the beaming teacher asks excitedly. "Marie just said 'shoe'! Why, it was the best 'shoe' you'd ever want to hear. Isn't that grand?"

Marie is 4. She has black hair and sparkling eyes. In every way—but one—she is a normal, sometimes mischievous, curious, pert, lovable little girl. Marie has been deaf since the day she was born. That's why it's a "red letter" day at the Lexington School for the Deaf, in New York City, when Marie says "shoe." It is her first spoken word.

It is often forgotten that tragedy fires with both barrels at the child born deaf. Because he can't hear, he can't speak. Usually strong, able vocal chords are there, but they cannot be molded into speaking voices without painstaking training and care.

Watch an untrained deaf child try to make himself understood. With strained gestures and painful efforts at understandable sound, he gets mostly just sympathy from adults. But sympathy and pity should be tabu. Superintendent O'Conner of the Lexington School has developed a program to help these bright eyed, but dull eared youngsters solve the problem of social adjustment. The keynote of the program is naturalness and self



Naturalness and self-reliance is the keynote for solving the social adjustment problem that deaf children must face.

# with their EYES

**By ROY A. BENJAMIN JR.**

reliance. The school gets them young—at 3 years of age or even before. The children use a hearing aid; sign language and gestures are eliminated. Natural speaking and lip reading are substituted. Parents are urged to attend classes along with their children.

Here is the nursery, with eight intent tots listening to the teacher with their eyes. She says "ball." They point to a red ball on the table. She follows with "comb," "airplane," "lollipop," "boat." If they respond correctly, it is a real triumph.

Before and after these elementary problems in connecting words to lip movement, there is a prolonged stream of natural talk by the teacher. "Get your coat," she says. "Isn't it warm?" "See my red dress." Perhaps 99 per cent of what is said is not understood, but the theory is to bombard the children with a constant flow of natural language. This leads to natural listening, then to natural speaking after sufficient repetition.

The earphones they wear and the microphones in front of them are only partial aids. They were designed by Mr. O'Conner and built by Scott N. Reger of the University of Iowa. Sound is greatly magnified by these appliances. Still, these

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**NOSTRUMS AND QUACKERY AND PSEUDO-MEDICINE**

(Vol. 3, 1936) By Arthur J. Cramp, M.D.

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children and nearly three hundred others in the Lexington School are too deaf ever to be able to use a mechanical hearing aid.

Almost all deaf persons can hear sound when greatly magnified, but they cannot distinguish different sounds. What little the children do get through the earphones thus makes the school's job of teaching them lip reading that much easier.

There is a strict ban on sign language in the school. "They must learn natural language if they want to get along," Mr. O'Conner contends. "These boys and girls are being trained for places in the business and social world. Sign language won't do them any good there. Our teachers use no lip or facial exaggerations when they speak. Everything is natural."

Here is 4 year old Richard, whose mother has been attending school with him. The teacher told her how to handle the boy's home education. She was made aware of the ceaseless repetition and patience so necessary to make her bright youngster speak, read and comprehend. Richard's mother proudly demonstrates how he understands and obeys her instructions to jump, wink, march, run, bow and hop. Elementary? You should have seen Richard when he entered the school a year ago, a typically pitiful case of a child whose channels of communication and comprehenion seemed hopelessly blocked.

"At home, the tendency usually is to pamper and pet the children because they are handicapped," Mr. O'Conner says. "Here they must take care of themselves. They must learn how to get along on even terms with other persons. One of our biggest problems is to get the parents to advance, rather than retard, the work we are trying to do."

The Lexington School has found that this can best be accomplished by having the mothers attend school, too. They are told never to shout at their deaf children, and they are cautioned not to point at an object, but to ask the child for it naturally. It may take ten, a hundred, a thousand times, but soon the child will understand. He won't forget, either, and the next time his eyes will hear and understand.

Patience and understanding are obviously necessities for teachers at the school. In addition to the well trained faculty, there are sixteen graduate students from Teachers College, Columbia University, who are taking the extensive course in education of the deaf there.

"It took me a year and a half to get Charles to enunciate the 'k' properly," one teacher admits. There are no tricks to it, just steady plugging and day-after-day drilling. Yet, the children love it. Once they discover they can speak even the simplest words, there is no stopping them. They want to babble every word they know.

Word rhythm and tone accent come hard to the youngsters. Most of them in their early learning stages, speak flatly and haltingly. They sound much like a mechanical talking device. Then, once they begin to catch on to syllable intricacies, they are likely to put accents in the wrong place. With skill and patience the teacher makes them repeat the word a score of times until they get it right.

Lenore, a dimpled refugee girl of 7, had another special problem. When she entered last fall, she could lip-read a few words in German. Lenore knew no English at all. The task was to get this baffling language over to her, though she could not hear or speak. Today when she says, "I went home with Mother," the school staff feels that it has won another battle against great odds.

Higher up, there are more practical examples of social adjustment. In the vocational school, girls are taught an occupation. Nearly every graduate of the school in the last three years is at work. Most of them are in the needle trade; some do novelty and craft work, and a few have secured office positions.

"The most important aspect of this training is to shape the proper attitude for these girls," the vocational director says. "No matter how well trained or skilful they are, they must not become discouraged or careless when they take their places in the working world."

As a final example, here is Malvine, an 18 year old girl who has been deaf since birth. She has been at the school for twelve years. Today she is brushing up on her algebra, for tomorrow she will take the entrance examination for Gallaudet College in Washington, D. C. This government supported college for the deaf, the only one of its kind in the world, begins for these students where the Lexington School stops.

# The EMOTIONS in DISEASE

(Continued from page 684)

comes from allaying fear by the brash promises of the ignorant or corrupt. Under such circumstances, the reaction picture frequently reappears.

In a certain number of instances, the persistence of the reaction picture may produce organic disease. This is true in many patients with ulceration of the stomach or duodenum; with certain types of colitis or arthritis; with certain metabolic disturbances, particularly diabetes; with circulatory damage from prolonged elevation of blood pressure, and with certain disturbances of the glands of internal secretion, particularly in exophthalmic goiter. Many of these organic diseases do not occur spontaneously in the lower animals. They are rarely seen in the aborigines or primitive tribes. They are more apt to occur in centers of civilization. They may be spoken of as the disturbances or even the price of civilization.

In the medical treatment of these disorders, the emotional origins of the illness must be recognized. It is not enough to correct the abnormality of sugar metabolism, decrease the oxidative processes, heal over the ulcer or allay the inflammation. These conditions will promptly recur if the fundamental emotional situation is not removed or corrected. In the management of these disturbances, the practitioner, recognizing the relationship between the emotional difficulty and the organic changes, attempts to alleviate the difficulty by dealing with the untoward circumstance and explaining the causal relationship. This can be successfully accomplished most often where the difficulty is situational, that is, arising from circumstances involving the patient's contact with the outside world. Where the emotional difficulty is characterologic, that is, inherent in the personality or conduct of the patient, the kindly and sagacious practitioner may not always be able to help the person without the assistance of the trained psychiatrist. Even more difficult than the management of the reaction picture resulting from purely emotional circumstances is the overplay that occurs in patients who have real organic disease. Thus it is that the patient, following an operation, or the individual with pneumonia or typhoid develops a fear or anxiety that may approach the panic state. It is difficult to differentiate where the symptoms of the true organic disturbance end and the manifestations of the anxiety state begin. If the anxiety symptoms are interpreted as manifestations of the fundamental organic disease, the outlook may appear to be ominous; unnecessary treatment may be instituted, and distressing complications and even death may be the penalty. On the other hand, if the physician in his wisdom recognizes the functional overplay and the magnification of preexisting symptoms by the loud speaker of anxiety, he may, by his confidence and reassurance, substitute hope for fear and faith for insecurity. The reaction picture quiets down, and the problem is simplified into one that deals wholly with the true manifestations of the organic disease.

In each and all these situations, the patient may help clarify difficulties by frankly stating his anxiety or insecurity. In treating these situations, the art of medical practice transcends its science. Laboratory investigations have value only in a minor sense. Complicated therapeutic procedures and treatments are of accessory value. The practitioner functions as an understanding friend and counselor. Actually, he is practicing psychotherapy, though he would probably deny this statement. This type of healing brings neither fame nor riches; yet it ranks day in and day out with the major accomplishments of medicine. Perhaps Luke had these services in mind when he said, "Of the most high, cometh healing."


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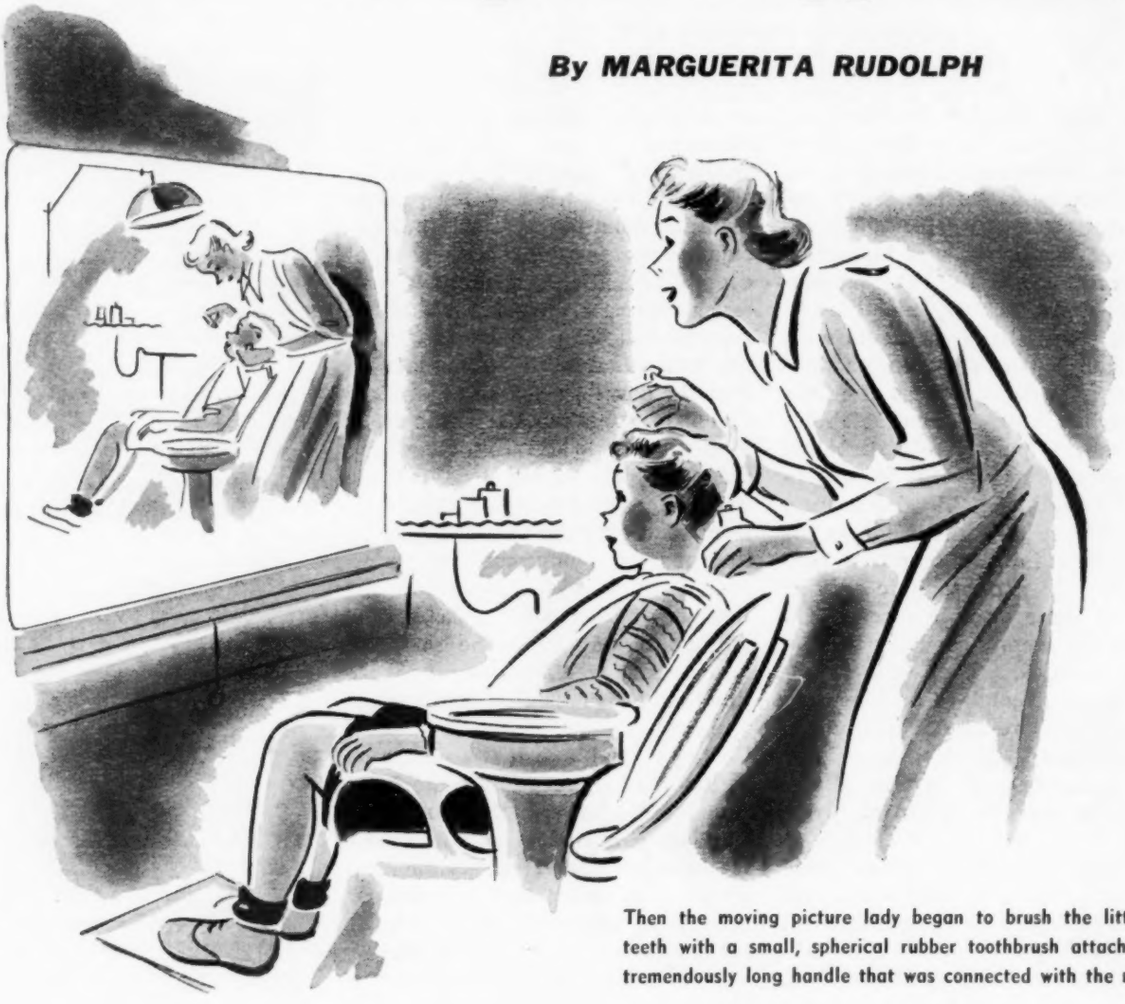
# A Special Appointment

**By MARGUERITA RUDOLPH**



Then the moving picture lady began to brush the little boy's teeth with a small, spherical rubber toothbrush attached to a tremendously long handle that was connected with the machine.

"GOOD-BY," said 6 year old Joey to his mother, as he stepped into the elevator by himself. "Twelfth floor," he said to the man in a uniform who was ready to turn a heavy lever. "I have an appointment for 4 o'clock." The elevator man grinned and pushed the handle next to his seat. And before Joey could read the floor numbers through the grating on the elevator door, the elevator jerked and stopped at the twelfth floor. Joey stepped out. He knew just where to turn, for he had been in this place before. He pushed a little white button and opened the door by himself.

"Hello, Joey," said a smiling young lady.

"I came for my appointment!" was Joey's answer to the greeting.

"Let's see. What is your appointment for?"

"Don't you remember?" asked Joey, as he made a face by opening his mouth and wrinkling his nose.

"Oh," laughed the young lady. "I thought you wanted your picture taken."

"I did that last time," answered Joey, and he followed the young lady into a small room with a big window, a sparkling white sink and shiny machines of all sorts.

"Let me see that picture!" said Joey. "Does it look like me?" And Joey saw an x-ray picture of his mouth. He looked and looked at it. "I didn't know I looked like that," he admitted.

"Now, are you ready to see the movie?" asked the young lady.

"Yes, I want to see a movie," answered Joey, "but I want to get a drink by myself first." Next to Joey's chair was a little fountain.

"Why are you putting the shade down?" he asked.

"For the movie," answered the young lady, as she propped a small movie projector on a shelf and plugged it in the wall. On the screen that was pulled over the window shade there appeared a girl eating dinner. She was eating meat, vegetables, milk and fruit, and she looked hungry for her meal!

"That's just what I eat, too!" exclaimed Joey. "And I drink lots of milk." Then the girl in the picture bit into an apple, and kept moving her jaws and cheeks, and grinding and grinding with her

teeth. It made Joey move his jaws from watching her. "But look at that boy!" exclaimed Joey, watching the picture.

"What's the matter with him?" asked the lady.

"Why, his teeth are dirty! I'd never want *my* teeth to be that dirty."

"But see what the boy is going to do now."

"Look!" exclaimed Joey again. "He is in a room just like *this* room. There is a little shiny round table that turns like this table; there is a fountain there like this one; an x-ray machine, and the little mirror on the table just like this one." Joey picked up the little mirror. "And the boy is sitting in a chair just like me." Then, as the lady in the picture dabbed some cotton in a bottle, the real lady beside him dabbed some cotton in a little bottle. The lady in the picture put it on the boy's teeth, and the real lady put it on Joey's teeth.

"Doesn't taste good," decided Joey, and he spit into the round bowl under the fountain. Then Joey stopped looking at the movie for a while and looked at his own teeth in a little mirror that the lady gave him.

"All right," said the real young lady. "You are a good helper, Joey." Then the lady in the moving picture started to clean the boy's teeth with a little round rubber toothbrush that was attached to a tremendously long handle that came from a machine.

"Just like this one," Joey pointed out. "It buzzes." Then he wanted to know what the moving picture lady had in the little jar.

"Just what I have here," answered the real lady, and she brought a jar of nice smelling purple paste. It smelled like mint gum. Joey watched her put the purple paste on the little rubber toothbrush and press on a machine button with her foot, taking the handle off the hook. The machine buzzed, and she rubbed and polished all Joey's teeth. He giggled a little and shook his shoulders.

"Tickle?" asked the lady.

"Uh-uh," answered Joey with his mouth open, as he watched the boy in the moving picture having his teeth cleaned. Then the lady stopped working and hung the special brush and handle on the hook. She gave Joey the mirror again. By that time the movie had stopped. He stared into the mirror with his mouth open and his teeth held together.

"See any improvement?"

"Yes!" shouted Joey, "I want my teeth to stay clean and shiny like this all the time!"

"Well, how often do you brush them?"

"Sometimes I forget to brush my teeth," confessed Joey. "But I won't forget any more. I'll brush them twice a day, so they'll stay clean."

"In that case," said the lady, walking over to a drawer, "I have something to give you."

"What?" asked Joey eagerly, twisting around in the chair.

"A new toothbrush—any color you choose," answered the lady.

"I choose red," decided Joey, looking into a drawer full of bright new brushes wrapped in shiny Cellophane. Joey unwrapped his red-handled brush and started brushing his teeth with it up and down, round about, back and front—not missing a single tooth.

"That's fine!" praised the lady. "And now you can go home."

"And will you call me up again for a special appointment?" asked Joey.

"I will," answered the lady, as she took him to the door.

"What do the letters D.D.S. mean here on the door?" he asked, pointing to the letters after the name Smith.

"That means Doctor of Dental Science, or dentist in plain language. That's what I am, and people call me Dr. Smith."

"Good-by, Dr. Smith," said Joey, stepping into the elevator by himself.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# Medical News OF THE MONTH

### *Treating Alcoholism*

A technic for treating alcoholism, which produces an aversion to liquor by means of a "conditioned reflex," may be expected to cure permanently about 64 per cent of addicts when rehabilitation measures are practiced after the patient is discharged, Walter L. Voegtlin, Seattle, Wash., estimates as a result of studies which he reports in the *American Journal of the Medical Sciences.*

A conditioned reflex is a response elicited by means of a strange or unnatural stimulus, established during a period of training or conditioning. In applying this principle to the treatment of alcoholism the action of certain drugs is utilized to elicit the reflex of nausea and vomiting. As the patient is given these drugs he is forced to see and smell an array of liquors, and he believes that the liquor is responsible for the nausea and vomiting which follow. He is told that the nauseating drugs are given as stimulants to support him during the ensuing nausea. When the procedure is repeated several times the patient usually develops an aversion to the sight and smell of alcohol sufficient to cause him not to taste it.

The author observes that an analogous conditioned reflex to certain foods often occurs spontaneously. "It is probable," he says, "that every one after partaking of certain foods too abundantly or of 'tainted' food has experienced nausea and vomiting. After such an experience there is left in the mind of the person an aversion or distaste that may last for years. The person may experience no distaste whatever for the food actually causing the illness should it escape his suspicion. His dislike may center upon an entirely blameless and innocent food that was eaten just prior to his illness. This observation indicates the importance of suggestion in establishing the conditioned reflex.

"Other methods of treating alcoholism have probably unwittingly included this principle in some phase but have apparently never premeditatively based their immediate treatment on this factor alone."

Subsequent treatments to reenforce the reflex when it has begun to weaken would probably contribute greatly to the benefits of this technic, the author believes. He also points out that if appropriate mental care could be furnished, the percentage of relapses would be smaller. During the period of aversion to liquor, he says, some patients have been able to improve the fundamental personality defect which was the basis of their drinking.

### *Combating Diphtheria and Tetanus*

A method for effectively treating persons who have been exposed to diphtheria or tetanus before they become ill with either disease has now had its efficacy thoroughly established, Gaston Ramon, Garches, France, reports in *The Journal* of the American Medical Association. The method involves the administration of antitoxin, which in itself combats the disease, followed by injections of toxoid which stimulate the body in developing its own defense mechanism. Heretofore it has been impossible to stimulate the individual's own immunity in such a short time. The author points out that this method for combating tetanus has great importance because of the present European conflict.

### *Riboflavin for Eye Disorders*

Forty-seven patients with eye disorders due to a deficiency of riboflavin, one of the vitamin B complex formerly called vitamin G, in their diet were cured by the administration of the vitamin in tablet or capsule form, V. P. Sydenstricker, H. M. Cleckley, Augusta, Ga., W. H. Sebrell, Washington, D. C., and H. D. Kruse, New York, report in *The Journal* of the American Medical Association.

Riboflavin is found in many green leafy vegetables, eggs, liver, beef, dry yeast and other foods. Its lack causes eyestrain not correctable by glasses, itching and burning of the eyelids, dimness of vision, bloodshot eyes and oversensitivity to light. In some patients, the four writers report, its deficiency also resulted in other skin changes, such as split lips, soreness of the mouth and tongue, and dry, leathery skin. These changes have long been considered due to pellagra, a disease caused by a deficiency of nicotinic acid, but recent reports give evidence that they are due to riboflavin deficiency.

### *Addison's Disease*

The known complications which may arise from the use of desoxycorticosterone, a synthetic preparation of the cortex hormone of the adrenal gland, in the treatment of Addison's disease make its use a procedure involving some risk, except in the hands of physicians provided with adequate facilities for identifying and controlling any difficult situations which may arise, Edgar S. Gordon, Madison, Wis., warns in *The Journal* of the American Medical Association.

He also says that it probably does not represent the true cortical hormone and declares that "until many details of its action are more thoroughly understood, its use should probably be restricted."

Publication of his report is authorized by the Council on Pharmacy and Chemistry of the Association. Two other papers in the same issue of *The Journal* also warn against the indiscriminate and excessive use of this substance in routine treatment.

Addison's disease is the result of the destruction of the cortex or outer portion of the adrenal glands, in from 80 to 90 per cent of the cases as the result of tuberculosis, in 10 to 20 per cent of atrophy (shrinking) and in a few instances of cancer. It is in reality a syndrome or group of symptoms and is characterized by lack or loss of strength, great feebleness of the heart action, irritability of the stomach, anemia and a peculiar brown pigmentation of the skin. Although it is a comparatively rare disease, it is one which has a high mortality rate.